RIELLO ELETTRONICA

riello ups

N.01.2006

GENERAL CATALOGUE

350VA-800kVA

The **RIELLO ELETTRONICA** group

Riello UPS Manufacturing head office in Legnago, nr Verona ▲

The Riello Elettronica group was formed in the mid 1990s through the strategic acquisition of leading-edge companies operating within the following markets:

- Data Processing and IT
- Small Office/Home Office (SoHo)
- Telecommunications
- Industrial manufacturing
- Security – emergency lighting, CCTV and alarm systems
- Hospital and Medical

SOME FACTS AND FIGURES ABOUT THE GROUP

7_ companies form the RIELLO ELETTRONICA Group

70_ years have passed since the "power" business was launched (with 30 years' specific Uninterruptible Power Supplies - UPS experience)

14_ lines in the RIELLO UPS range

2_ years is the average age of a Riello product, with a leading position maintained through far reaching R&D investment

2_ independent research centres dedicated to developing new technologies and products

9001_ ISO certification awarded to RIELLO UPS

120.000_ products manufactured each year by RIELLO UPS

riello ups

A COMPLETE SOLUTION WITH MAXIMUM RELIABILITY

The Riello Elettronica group companies have more than thirty years' power protection experience. The 7 group companies operate with a high level of synergy, offering considerable advantages in terms of quality and scale economies (more than 120.000 UPS produced each year). Each company also contributes its specific skills and experience across different market sectors to produce one of the widest possible POWER SOLUTIONS ranges for any application from 350VA to 6400kVA.

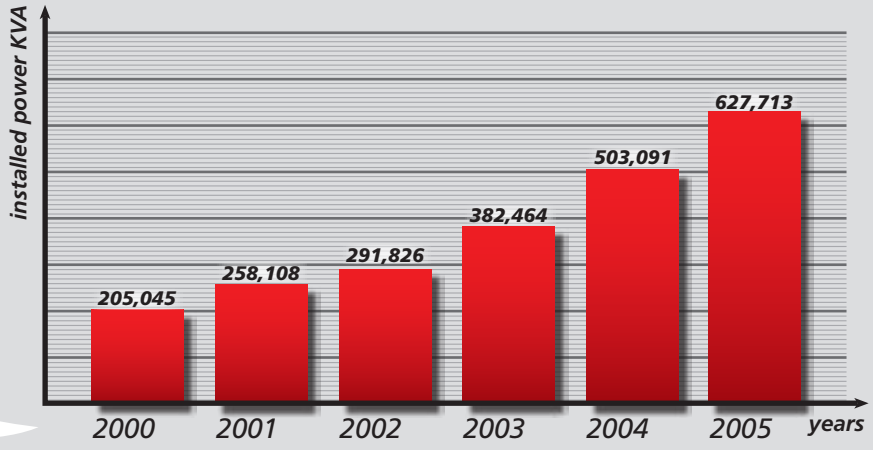
The RIELLO UPS range comprises of more than 14 product lines and options for powering any type of load (from information technology to industrial), in any type of installation (office or dedicated power room), with any type of distribution (single-phase or three-phase, TN/TT or IT), from any type of power source (mains or generator). RIELLO UPS also offers a wide range of communications options to allow users to automatically manage their "no-break system" over any type of communication medium (serial connection, BUS connection, telephone connection or LAN). The range today comprises:

- 350VA to 6400kVA Uninterruptible Power Supplies (UPS)
- Central supply systems for Emergency applications (CSS)
- Automatic Voltage Stabilisers (AVRs)
- UPS monitoring and communications software
- Intelligent automatic transfer switches
- Inverters (DC input /AC output)
- Modular rack-mount cabinets

Using these components users can configure the most suitable back-up solution for their application.

INSTALLED POWER

In 2005 RIELLO UPS delivered over 627MVA of UPS – enough to power every electrical appliance in a major city the size of Milan.



QUALITY POLICY

RIELLO UPS is ISO 9001:2000 certified. Over the years, quality has become engrained in the RIELLO UPS culture and plays an active role in determining product quality and delivering fast, effective customer service levels.
The manufacturing processes are integrated across the Legnago (nr Verona) and Milan facilities, and the final test procedure consists of no less than six fully automatic tests covering both Printed Circuit Boards (PCBs) and finished products, that simulate actual site conditions - known as Active Run-In. In addition certain RIELLO UPS products carry the prestigious TÜV accreditation.

SOLUTIONS

RIELLO UPS supplies both standard and customised power solutions that cater for the broadest range of applications, installations and operating conditions. The RIELLO UPS TEC Service provides additional support in terms of technical advice, guidance on regulatory matters and support for system designers and integrators. From such a wide product range and the experience it has built up over decades within the power protection industry, RIELLO UPS delivers customised products to the most exacting naval, aeronautical, petrochemical and military applications.

DIALOG = COMMUNICATION!

RIELLO UPS has placed a high priority on the development of software and hardware communications solutions. These allow RIELLO UPS products to integrate into any type of environment requiring UPS remote control, monitoring and communication. The communications solutions have all been developed by the RIELLO UPS research centres and are leading-edge within their field.

GROWTH AND DEVELOPMENT

RIELLO UPS adopted a winning formula from the start – close monitoring of every facet within its supply chain from research and development, to design, production, distribution and after-sales service.

Research centre - Legnago (Verona)

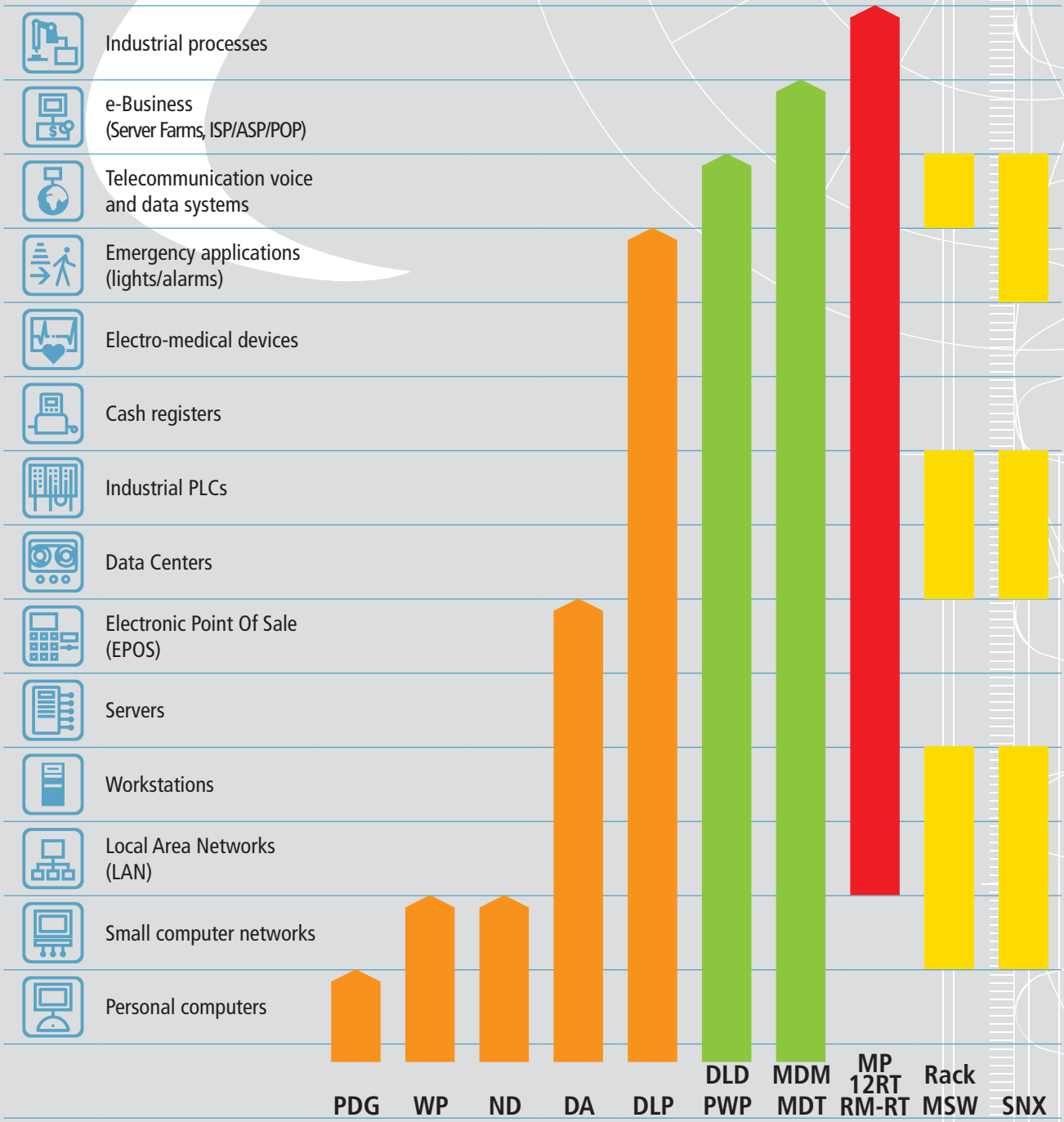
Such a formula places heavy demands on financial and administrative resources but it has enabled RIELLO UPS to continually expand and deliver the highest possible quality power solutions within a rapidly growing market. Following this corporate policy has enabled RIELLO UPS to become a global brand and leading European manufacturer of one of the widest possible ranges of power solutions.

INNOVATION

Through continuous investment in Research and Development, RIELLO UPS delivers leading-edge power solutions. The RIELLO UPS **Research Centre**, opened in 2003 at the Legnago site, is divided into three distinct areas to support an intensive development program:

- *Design area* – where new UPS products are initiated and designed
- *Experimental area* – where laboratories with sophisticated test and measuring equipment are used to test prototypes and analyse results
- *Test area* – where accelerated life tests are conducted inside temperature controlled environments with actual 'real-world' loads.

UPS product range
UPS SELECTION TABLE



IT RANGE
For smaller ICT applications (including home PCs and SOHO - Small Office/Home Office systems) and office voice and data networks requiring flexible, reliable and low cost solutions with outstanding communication capabilities.

NETWORK RANGE
For corporate voice and data networks, including internet service providers and telecommunications systems, requiring outstanding reliability and the option to upgrade in terms of their power, reliability and runtime.

INDUSTRY RANGE
For enterprise wide voice and data networks, industrial processes, security (emergency lighting and fire alarms) and hospital applications, requiring maximum electrical performance, and system expansion options.

NET-TEL RANGE
(19" rack-mount solutions)
For IT and telecommunications applications, in 19" rack-mount cabinets wherever the highest levels of reliability, modularity and compactness are required.

IT
Range

PLUG DIALOG

350-550 VA
single-phase

USB UNIVERSAL SERIAL BUS

TÜVRheinland GS geprüfte Sicherheit

LOAD CONFIGURATOR

Load type	Power (VA)*
Personal computer	250
LCD Monitor	70
15" Monitor	150
Scanner, printer	200
Modem, TV, DVD reader, PlayStation, Hi-Fi, Phone, Fax	50
Laser printer**	200

**Average estimated value.*
***Use the Plug DIALOG filtered power output.*

CHARACTERISTICS

- Maximum compactness
- 3 sockets with mains fail protection
- 1 socket with filtering for powering loads such as laser printers
- integrated protection for telephone line/modem
- cold start capability: the UPS can power up without a mains supply present
- user replaceable batteries
- USB interface
- can be placed on a desktop, floor, or be wall-mounted
- input supply and telephone cable included
- short-circuit protection
- auto restart (on mains return, after batteries have discharged)
- GS/TÜV marks
- available with French (2P+T), UK or Schuko plugs.

ADVANCED COMMUNICATION

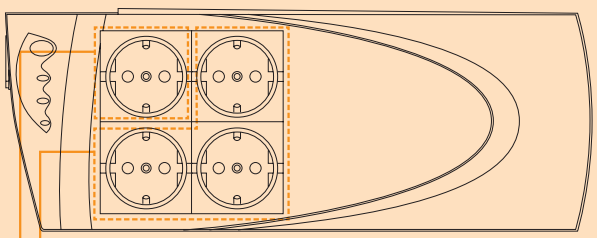
- **PowerShield²** monitoring and shut-down software for Windows 95-OSR2, 98, NT 4.0, Me, XP, 2003
- Plug and Play function.

2-YEAR WARRANTY

The **PLUG DIALOG** range is the ideal solution for small office and home systems (SOHO) requiring over voltage and mains failure protection. The compactness, versatility (a push-button switch with LED-based mimic panel and user-replaceable batteries) and functionality of the **PLUG DIALOG** allow it to easily fit into any small office and home environment.
When the mains fails, connected loads are powered with a pseudo sine wave supply from the inverter. For additional security users can download a version of the **PowerShield²** UPS monitoring and control software.

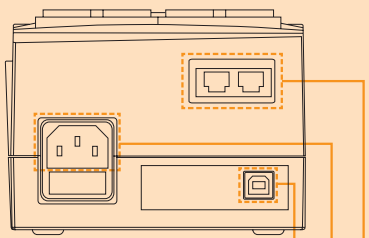
MODELS	PDG 400	PDG 600
POWER	350VA/225W	550VA/335W
INPUT		
Rated voltage	230 Vac	
Voltage range	188-262 Vac	
Frequency	50/60 Hz	
OUTPUT		
Voltage on mains operation	230 Vac	
Frequency on battery operation	50 or 60 Hz	
Waveform from battery/inverter	Pseudo sinewave	
BATTERIES		
Type	VRLA AGM Maintenance-free lead-acid	
Recharge time	6-8 h	
ENVIRONMENTAL		
Weight (kg)	3	3.1
Dimensions (hwd) (mm)	88x120x320	
Tel. protection	RJ45 connectors	
Communication	USB interface	
Safety compliance	EN 62040-1-1 and Directives 72/73 EEC, 93/68 EEC, EN 62040-3	
EMC conformance	EN 62040-2 and Directives 89/336 EEC, 92/31 EEC, 93/68 EEC	
Marks	CE; GS/TÜV	
Operating temperature	0 °C - 40 °C	
Colour	Graphite grey	
Altitude and relative humidity	6000 meters max. elevation, <95% non condensing	
Accessories provided	1 input supply cable, telephone cable	

DETAILS



Sockets with UPS protection
(no break in power if mains fails)

Filtered socket: overvoltage protection only



USB communication port

Mains input

Phone/modem protection

WIN DIALOG PLUS

400-650 VA
single-phase

Designed for Microsoft® Windows® XP

TÜVRheinland GS geprüfte Sicherheit

The **WIN DIALOG** series includes the 400-550-650VA models and uses digital technology. The load is powered from the mains through an AVR to stabilise brownout, sag and surge voltages, and EMI filters to suppress spikes and transients. When the mains fails, the load is powered by the inverter with a pseudo sinewave to provide sufficient runtime for computer system shutdown using the **PowerShield²** software supplied as standard.

CHARACTERISTICS

- Mains power supply stabilisation and filtering (with AVR and filters for atmospheric disturbance suppression)
- integrated protection for PC networks and telephone line/ modem connections RJ11
- cold start capability: the UPS can power up without a mains supply present
- high reliability with built-in battery test feature
- supplied with 2 output cables
- GS-TÜV certification
- Microsoft certified product.

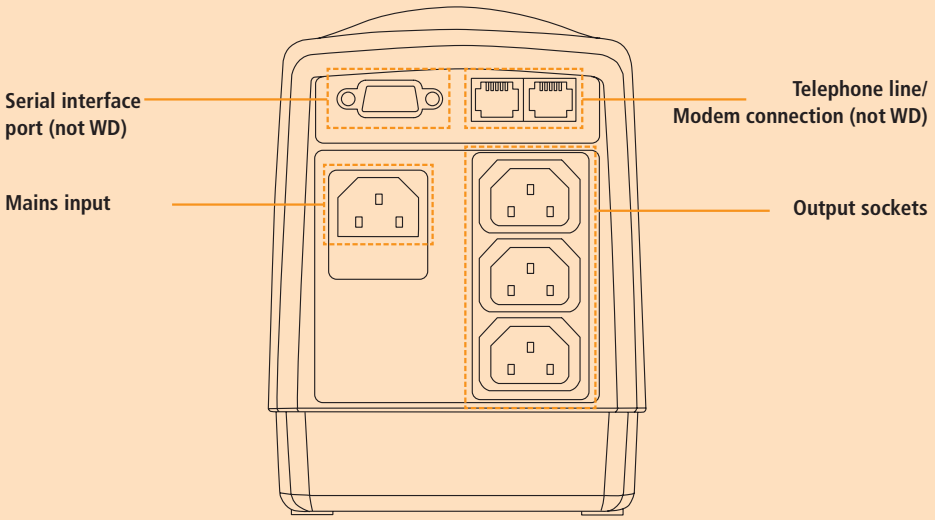
ADVANCED COMMUNICATION

- **Powershield²** monitoring and shut-down software for Windows 95, 98, NT 4.0 Workstation operating systems included, Me, 2000, 2003, Mac OS X, XP, Linux, Novell (on CD ROM: models WP40-WP55-WP65)
- advanced communication (standard RS232 interface: models WP40-WP55-WP65)
- Plug and Play function.

2-YEAR WARRANTY

MODELS	WD 40	WP 40	WP 55	WP 65
POWER	**400VA/240W**	**400VA/240W**	**550VA/330W**	**650VA/400W**
INPUT				
Rated voltage	220-240 Vac			
Voltage range	230 Vac (+20/-26%)			
Frequency	50/60 Hz auto sensing			
OUTPUT				
Voltage on mains operation	230 Vac (-8%, +10%)			
Voltage on battery operation	230 Vac (+/-5%)			
Frequency on battery operation	50 or 60 Hz (+/- 0.5%)			
Waveform from battery/inverter	Pseudo sinewave			
BATTERIES				
Type	VRLA AGM Maintenance-free lead-acid			
Recharge time	6-8 h			
ENVIRONMENTAL				
Weight (kg)	5.8	5.8	6.2	6.5
Dimensions (hwd) (mm)	152x110x325			
Tel. protection	RJ45 connectors			
Communication	RS232 serial port			
Safety compliance	EN 62040-1-1 and Directives 72/73 EEC, 93/68 EEC, EN 62040-3			
EMC conformance	EN 62040-2 and Directives 89/336 EEC, 92/31 EEC, 93/68 EEC			
Marks	CE; GS/TÜV			
Operating temperature	0 °C - 40 °C			
Colour	Metallic grey (silver)			
Altitude and relative humidity	6000 meters max. elevation, <95% non condensing			
Accessories provided	2 output supply cables, 1 serial cable, 1 telephone cable; user guide			

DETAILS



NET DIALOG

800-2000 VA
single-phase

Designed for Microsoft® Windows® XP

TÜVRheinland GS geprüfte Sicherheit

The **NET DIALOG** series includes the 800-2000VA models and uses digital technology. The load is powered from the mains through an AVR to stabilise brownout, sag and surge voltages, and EMI filters to suppress spikes and transients.
When the mains fails, the load is powered by the inverter with a pseudo sinewave to provide sufficient runtime for computer system shutdown using the **PowerShield²** software supplied as standard. The UPS also incorporates a filtered socket for PC network and telephone line cable protection.
For advanced communication and top flight performance, **NET DIALOG** is the ideal solution for small network users requiring total control of their power system.

CHARACTERISTICS
- Mains power supply stabilisation and filtering (technology with AVR and filters for atmospheric disturbance suppression)
- cold start capability: the UPS can power up without a mains supply present
- auto restart at power-up
- integrated protection for PC networks and telephone line/ modem connections RJ11
- high reliability with built-in automatic battery test feature.

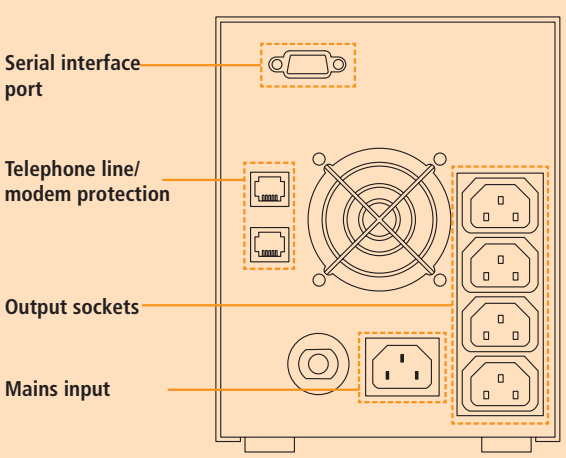
ADVANCED COMMUNICATION
- High level multi-platform communication for all operating systems and network environments: **PowerShield²** monitoring and shut-down software included, with standard integrated SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems
- The UPS is supplied with a communications cable for 'Plug and Play' PC connection.

2-YEAR WARRANTY

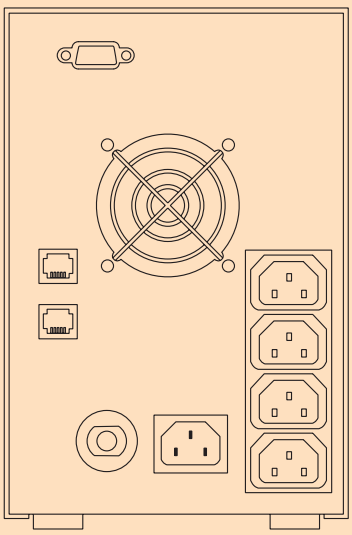
MODELS	ND 80	ND 100	ND 150	ND 200
POWER	800VA/480W	1000VA/600W	1500VA/900W	2000VA/1200W
INPUT				
Rated voltage	220-230-240 Vac			
Voltage range	230 Vac (±25%)			
Frequency	50/60 Hz auto sensing			
OUTPUT				
Voltage on mains operation	230 Vac (-8%, +10%)			
Voltage on battery operation	230 Vac (+/- 5%)			
Frequency on battery operation	50 or 60 Hz (+/- 0.5%)			
Transfer time	2 ms			
Waveform from battery/inverter	Pseudo sinewave			
BATTERIES				
Type	VRLA AGM Maintenance-free lead-acid			
Recharge time	4-6 h			
ENVIRONMENTAL				
Weight (kg)	14	14.5	15	20
Dimensions (hwd) (mm)	180x140x375			214x140x410
Protection	Battery low - overcurrent - short-circuit			
Tel/Modem protection	RJ45 connectors			
Communication	RS232 port			
Safety compliance	EN 62040-1-1 and Directive 73/23, 93/68 EEC, EN 62040-3			
EMC conformance	EN 62040-2 and Directive 89/336, 192/31 EEC, 93/68 EEC			
Surge capability	IEC 801-5			
Noise	< 40 dBA at 1 m			
Colour	metallic grey (silver)			
Operating temperature	0 °C - 40 °C			
Storage temperature	-15 °C - 45 °C			
Relative humidity	< 95% non condensing			

DETAILS

ND 80
ND 100
ND 150



ND 200



DIALOG ACTIVE

500-2000 VA
single-phase

Designed for Microsoft® Windows® XP

USB UNIVERSAL SERIAL BUS

The **DIALOG ACTIVE** series includes the 500-750-1000-1500-2000VA models and uses digital technology. The load is powered from the mains through an AVR to stabilise brownout, sag and surge voltages, and EMI filters to suppress spikes and transients.
When the mains fails, the load is powered by the inverter with a true SINEWAVE to provide sufficient runtime for computer system shutdown using the **PowerShield²** software supplied as standard. The UPS also incorporates a filtered socket for PC network and telephone line cable protection.
For advanced communication and outstanding performance (including PowerShare and a true SINEWAVE output at all times), **DIALOG ACTIVE** is the ideal solution for larger network users requiring total control of their power system.

CHARACTERISTICS
- Mains power supply stabilisation and filtering (with AVR and filters for atmospheric disturbances suppression)
- high quality sinewave output (distortion <2%)
- high level immunity to surges
- cold start
- integrated protection for PC networks and telephone line/modem connections RJ45-RJ11
- high reliability with built-in automatic battery test feature
- auto restart at power-up
- Microsoft certified product.

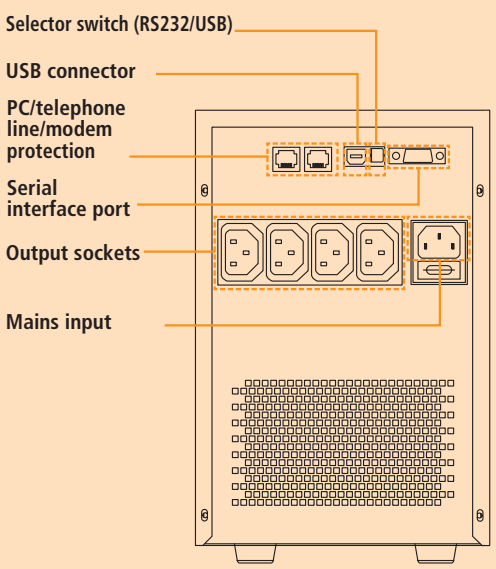
ADVANCED COMMUNICATION
- Advanced, multi-platform communication for all operating systems and network environments: **PowerShield²** monitoring and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems
- USB or RS232 serial port (selectable)
- Slot-in SNMP network adapter card (DA 200 model).

2-YEAR WARRANTY

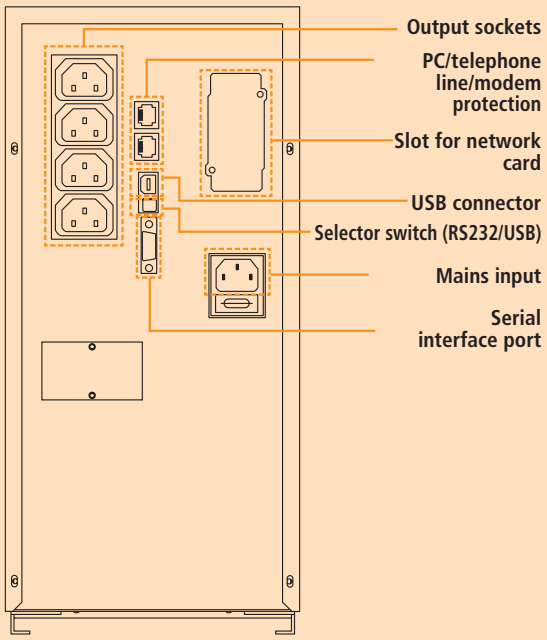
MODELS	DA 50	DA 75	DA 100	DA 150	DA 200
POWER	500VA/335W	750VA/500W	1000VA/670W	1500VA/1000W	2000VA/1340W
INPUT					
Rated voltage	230 Vac				
Voltage range	230 Vac (-25%, +21%)				
Frequency	50/60 Hz auto sensing				
Frequency range	+/- 5Hz				
OUTPUT					
Rated voltage	230 Vac				
Voltage on mains operation	230 Vac (-15%, +11%)				
Frequency	50 - 60 Hz auto sensing				
Voltage on battery operation	230 Vac (+/-5%)				
Waveform	Sinewave				
Distortion	<2%				
BATTERIES					
Type	VRLA AGM Maintenance-free lead-acid				
Recharge time	2-4 h				
ENVIRONMENTAL					
Weight (kg)	13	14	14	20	25
Dimensions (hwd) (mm)	231x158x400				340x158x485
Operating temperature	0 °C - 40 °C				
Relative humidity	< 95% non condensing				
Protection	Overload - short-circuit - overvoltage - undervoltage - temperature - low battery				
Communication	USB / RS232				
Safety compliance	EN 62040-1-1 and Directive 73/23 EEC, EN 62040-3				
EMC conformance	EN 62040-2 and Directive 89/336				
Surge capability	IEC 801-5 6 KV 1.2 / 50 µs; 3KA 8/20 µs differential				
Colour	Light grey RAL 7035				
Noise	<40 dBA at 1 m				
Extended runtime solutions	–				yes

DETAILS

DA 50
DA 75
DA 100
DA 150



DA 200



DIALOG PLUS

700-3000 VA
single-phase

Designed for Microsoft® Windows® XP

TÜVRheinland GS geprüfte Sicherheit

The **DIALOG PLUS** series includes the 700-1000-1500-2000-3000VA models and uses double conversion technology (VFI). The load is powered continuously by the inverter with an EMI filtered, stabilised and regulated sinewave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges, even on bypass.
The UPS can power the load for long periods (using battery extension packs) or provide sufficient runtime to allow shut-down of the protected systems using the PowerShield² software, supplied as standard, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux operating systems.
For outstanding power protection and communication **DIALOG PLUS** is the best solution for sensitive and "mission-critical" applications.

DIALOG PLUS-ER models are supplied with a larger internal charger and with their matching external battery extension packs can achieve long back up times.

CHARACTERISTICS

- Reliable, filtered, stabilised and regulated sinewave output (double conversion technology VFI in conformance with IEC 62040-3 specifications) with filters for atmospheric disturbance suppression
- high level immunity to surges (up to 150%)
- auto restart on mains return (programmable)
- start-up without mains (cold start)
- GS-TÜV certification
- power factor correction with sinusoidal input to ensure a low impact on the mains supply (UPS input power factor, close to 1)
- wide input voltage window (110-300Vac) to reduce battery usage
- integrated protection for PC networks and telephone line/modem connections RJ45-RJ11
- option to extend the back up time to several hours
- software-programmable operating parameters
- timer for scheduled shut-down and power up (software programmable)
- highly reliable batteries with automatic and manual test feature
- highly reliable system with full microprocessor control
- breaker based input protection.

ADVANCED COMMUNICATION

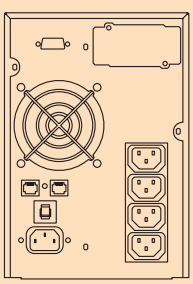
- Advanced, multi-platform communication for all operating systems and network environments: **PowerShield²** monitoring and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems
- free UPS tools configuration software
- RS232 serial port
- slot-in SNMP network adapter card.

2-YEAR WARRANTY

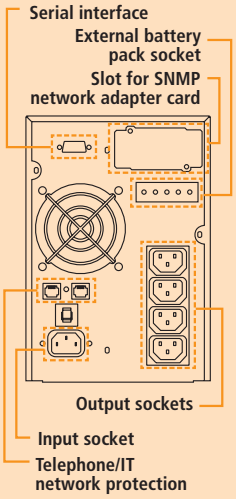
MODELS	DLP 70	DLP 100	DLP100ER	DLP 150	DLP 200	DLP200ER	DLP 300	DLP300ER
POWER	700VA/490W	1000VA/700W		1500VA/1050W	2000VA/1400W		3000VA/2100W	
INPUT								
Rated voltage	220 - 230 - 240 Vac							
Minimum voltage range	110V up to 60% of load / 120V from 60% to 70% of load 140V from 70 to 80% of load / 160V from 80% to 100% of load							
Maximum voltage	300 Vac							
Rated frequency	50/60 Hz ± 5Hz							
Power factor	> 0.97							
Input current	Sinewave							
BY PASS								
Voltage range	180 - 264 Vac							
Frequency range	Selected frequency ±5Hz							
BATTERIES								
Recharge time	2-4 h		-	2-4 h	4 h	-	4 h	-
Type	VRLA AGM Maintenance-free lead-acid							
OUTPUT								
Rated voltage	selectable 220, 230 or 240 Vac ±1.5%							
Waveform	Sinewave							
Voltage distortion	< 2%							
Frequency	50 or 60 Hz auto sensing							
Crest factor	3 : 1							
Overloads	110% 30'; 130% 30"; 150% 10"							
ENVIRONMENTAL								
Weight (kg)	12	14	8	19	34	14	35	15
Dimensions (hwd) (mm)	231x158x400			231x158x500	340x192x460			
Operating temperature	0 °C - 40 °C							
Relative humidity	< 95% non condensing							
Protection	Overload - short-circuit - overvoltage - undervoltage - temperature - low battery							
Communication	RS232 + communication interface slot							
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3							
Surge capability	3KA 8/20 µs							
Colour	metallic grey (silver)							
Noise	<40 dBA							
OPTIONS								
Extended runtime solutions	–	yes						
Isolation transformer box (hwd) (mm)	231x158x434				340x158x460			

DETAILS

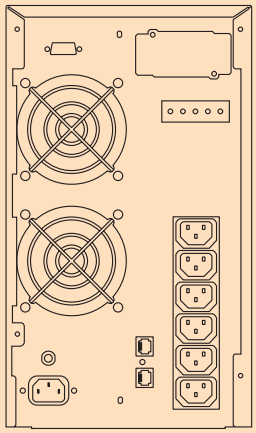
DLP 70



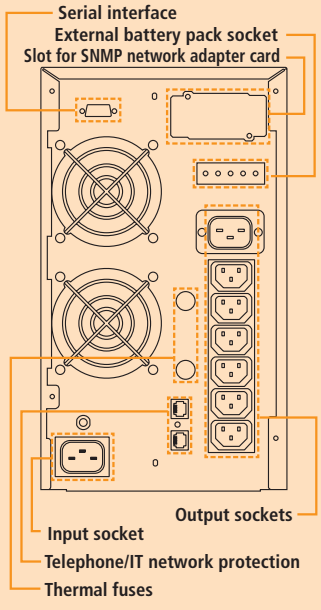
DLP 100
DLP 100 ER
DLP 150



DLP 200
DLP 200 ER



DLP 300
DLP 300 ER



NETWORK
Range

DIALOG DUAL

3,3 - 10 kVA
single/single-phase and three/single-phase

Designed for Microsoft® Windows® XP

USB UNIVERSAL SERIAL BUS

DIALOG DUAL is the best solution for protecting medium sized networking applications which require the highest possible levels of reliability. The UPS is designed to support a range wide applications from IT to security. **DIALOG DUAL** is unique in that the UPS can be placed directly onto the floor or mounted in 19" rack mount cabinets. The range is available in 3300-4000-5000-6000-8000-10000VA models. The UPS is primarily an on-line double-conversion (VFI) technology system with further selectable operating modes that can configure the UPS to protect applications including emergency lighting, security and medical systems.
Each UPS features advanced communications and diagnostics including a digital front panel display that can be turned to suit the installation format, RS232 and USB interfaces, and an internal adaptor slot for SNMP and other interface card options from RIELLO UPS. **PowerShield²** is supplied as standard.

1. Release the mimic panel by applying pressure to the catches

2. Rotate the mimic panel and fasten it back on again

3. Turn the UPS 90°

4. Slide the UPS into the rack cabinet

SIMPLIFIED INSTALLATION

- The UPS can be installed as a floor standing tower or 19" rack mount UPS. The front panel digital display can be pulled out (using the keys provided) and rotated to suit the installation format
- low noise level (<40dBA) thanks to the digitally PWM controlled ventilation system which is load and temperature dependent, and the use of an inverter with a high switching frequency (>20kHZ, above the audible range)
- optional bolt-on maintenance bypass (DLD 5-6-8-10 kVA models) to allow service without disruption to the loads
- performance guaranteed in temperatures up to 40°C
- two IEC output plugs with thermal protection (DLD5-6-8-10 kVA).
- PowerShare output socket (2x10A IEC) functionality on DLD 5-6-8-10 kVA models

SELECTABLE OPERATING MODES

- On line
- Economy Mode: selects Line Interactive VI technology to power non-critical loads from mains and achieve up to 98% operating efficiency
- Smart Active Mode: the UPS selects automatically whether to operate in On-line VFI technology - full system protection or Line Interactive VI mode depending on the stability of the mains supply
- Emergency: the UPS can be programmed to work only when the mains fails - suitable for emergency lighting
- Frequency conversion 50 or 60Hz

GUARANTEED OUTPUT QUALITY

- Even with typical distorting IT loads with crest factors of 3:1
- increased short circuit current on the bypass
- increased overload capacity: 150% on inverter even when mains supply has failed
- reliable, filtered, stabilised and regulated sinewave output (double conversion technology VFI in conformity with IEC 62040-3 specifications) with filters for atmospheric disturbance suppression
- rephasing of load as the UPS has an input power factor close to 1, with a sinusoidal input current

HIGHLY RELIABLE BATTERY PERFORMANCE

- Automatic and manual battery tests
- Unique Low Ripple Current Discharge (LRCD) to help prolong battery life
- hot-swap user replaceable batteries
- unlimited extendable back-up time using modular design Battery Extension Packs
- increased ride through (without batteries) on mains breaks up to 40ms and for fluctuations ranging from 84 to 276Vac

OTHER CHARACTERISTICS

- Output voltage selection: 220-230-240Vac
- auto restart when mains power returns - programmed using the UPS Tools software supplied
- bypass on: when the UPS is switched off, it automatically goes into bypass mode to charge the batteries
- automatic power down due to minimum load
- end of battery discharge pre-alarm
- delayed start up
- completely digitally controlled
- automatic bypass with no break in power supply
- use of IMS (Insulated Metallic Substrates) modules
- status, measurements, and alarms available on the standard backlit display
- UPS can be updated digitally (flash upgradeable)
- input protected by resettable thermally activated switch
- Back-feed protection: to avoid current being fed back into the mains should a fault occur
- manual switch over to bypass

MICROSOFT CERTIFIED PRODUCT

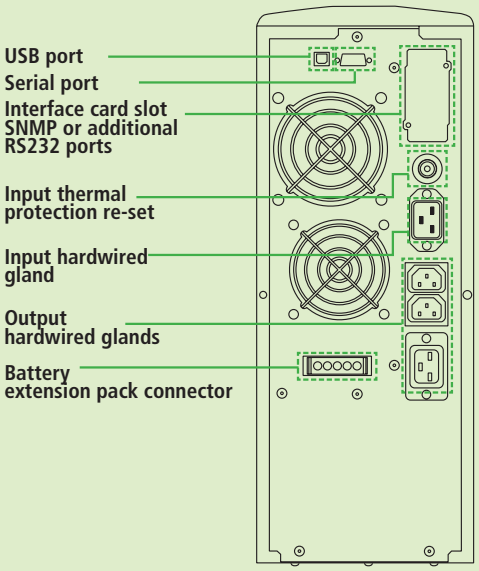
ADVANCED COMMUNICATION

- Advanced, multi-platform communication for all operating systems and network environments: **PowerShield²** supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a communications cable for 'Plug and Play' PC connection
- plug & play feature
- USB port
- RS232 serial port
- interface card slot
- Microsoft certification.

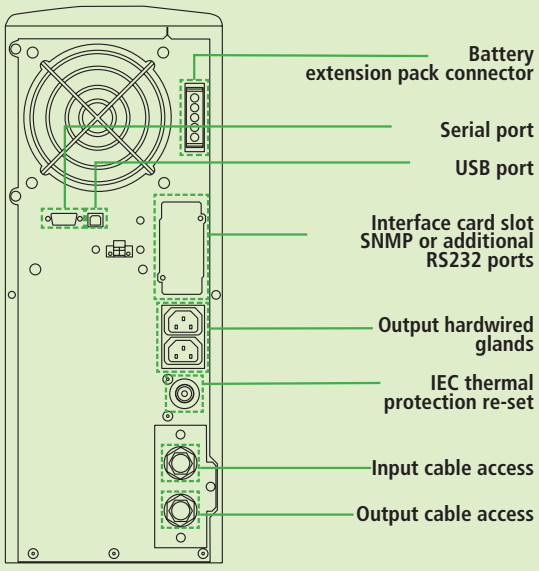
2-YEAR WARRANTY

DETAILS

DLD 330
DLD 400



DLD 500 - DLD 600
DLD 800 - DLD 1000



MODELS	DLD 330	DLD 400	DLD 500	DLD 600	DLD 800 *	DLD 1000 *
POWER	3300VA 2300W	4000VA 2400W	5000VA 3500W	6000VA 4200W	8000VA 5600W	10000VA 7000W
INPUT						
Rated voltage	220 - 230 - 240 Vac				230 Vac single-phase or 400 Vac three-phase + N	
Minimum voltage	164 Vac @ load 100% 84 Vac @ load 50%					
Rated frequency	50/60 Hz ± 5 Hz					
Power factor	> 0.98				> 0.98 (in single/single-phase)	
Current distortion	≤ 7%		≤ 5%		≤ 7% (in single/single-phase)	
BY PASS						
Voltage range	180 - 264 Vac (selectable in Economy Mode and SMART ACTIVE Mode)					
Frequency range	Selected frequency ±5 % (user configurable)					
BATTERIES						
Recharge time	2 - 4 h					
OUTPUT						
Rated voltage	220 - 230 - 240 Vac selectable					
Static variation	1,5 %					
Dynamic variation	≤ 5% in 20 ms					
Wave form	Sinewave					
Voltage distortion with linear load	< 3%					
Voltage distortion with non-linear load	< 6%					
Frequency	50/60 Hz selectable					
Crest factor	3 : 1					
OVERLOAD CAPACITY						
100% < Load < 110%	1'				1'	
110% < Load < 125%	4 "				1'	
125% ≤ Load < 150%	4 "				10"	
Load > 150%	0.5 "				0,5"	
ENVIRONMENTAL						
Weight (kg)	38	40	62	64	80	85
Dimensions (hwd) (mm) tower/rack	455x175x520/175(4U)x483x520		455x175x660/175(4U)x483x660		2x455x175x660/2x175(4U)x483x660	
On Line Efficiency	92%					
Line-interactive/Smart Active Efficiency	98%					
Operating temperature	O °C - 40 °C					
Relative humidity	< 95% non condensing					
Protection	Overload - short-circuit - overvoltage - undervoltage - temperature - low battery					
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3					
Communication	USB / RS232 + communication interface slot					
Colour	metallic grey (silver)					
Noise	<40 dBA at 1 m		<45 dBA at 1 m			
Accessories provided	2x10A cables; 1xIEC-16A plug; software; serial cable; plastic keys to release display; handles kit		2 cable guides; terminal board connection; software; serial cable; plastic keys to release display; handles kit			
OPTIONS						
Extended runtime solutions	yes (with and without battery charger)					
Internal Maintenance Bypass	no		yes			
Interface cards	yes					
Telescopic rails for rack cabinet	yes					

*** Available from the second half of 2006**

POWER DIALOG PLUS

6,5 - 10 kVA
single/single-phase and three/single-phase

For technology, outstanding performance (selectable operating modes: On-line, Economy, Smart-Active and Standby/Off - for emergency lighting applications), advanced diagnostics (standard LCD display, RS232 interfaces with **PowerShield²** software included, EPO input contact, and a network interface slot), **POWER DIALOG PLUS** provides maximum protection for vital 'mission-critical' networks and security applications (electromedical).

The **POWER DIALOG PLUS** series includes the 6.5-8-10kVA single/single-phase and three/single-phase models and uses double conversion on-line technology (VFI). The load is powered continuously by the inverter with an EMI filtered, stabilised and regulated sinewave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges, even on bypass.

Additional battery extension packs allow the standard battery runtime to be extended up to several hours.

HIGH RELIABILITY
- Full microprocessor control with no-break static and manual by-pass.

LOW POWER CONSUMPTION
To increase efficiency up to 98%:
- ***Economy Mode***: uses Line Interactive VI technology to power less critical loads from the mains supply for certain periods. The function can be set from the front panel keypad or remotely using software.
- ***Smart Active***: if the mains supply is out of range, the UPS will power the load from the inverter as an On-line UPS. When the mains supply returns to within range again, the UPS will monitor this for a certain period before selecting Line Interactive operation.

SIMPLE TO INSTALL
- Capability to connect to a single or three phase mains supply
- output terminal block + 2 IEC outlets for powering local equipment (computers, modems and notebooks)
- easy to position (integrated castors).

HIGH RELIABILITY BATTERIES
- Built-in automatic and manual battery test feature.

LOW IMPACT ON MAINS
- Power factor correction with sinusoidal input to ensure a low impact on the mains supply (UPS input power factor, close to 1) for the single-phase/single-phase series.

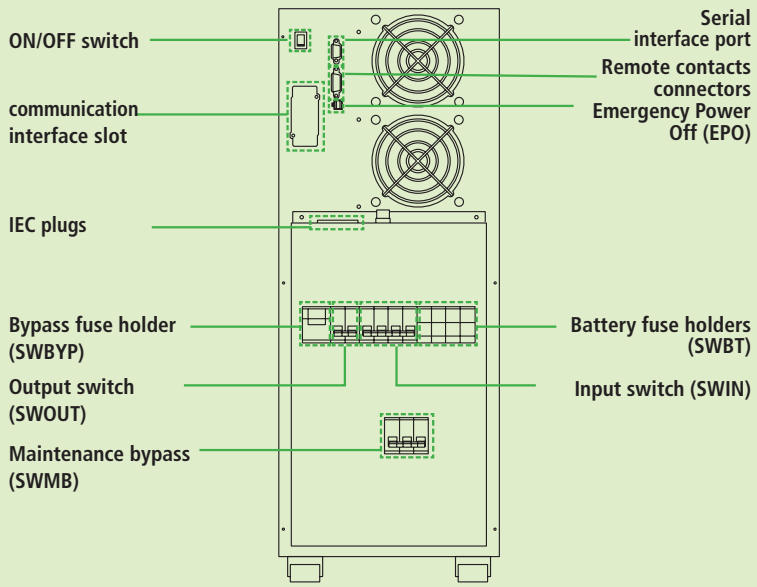
OTHER CHARACTERISTICS
- Reliable, filtered, stabilised and regulated sinewave output (double conversion on-line technology VFI according to EN62040-3 specifications) with filters for atmospheric disturbance suppression
- high level diagnostics: states, measurements and alarms available from the built-in LCD
- very low noise level <40dBA
- auto restart on mains return (programmable via software)
- ***Standby/Off***: for security applications like emergency lighting where the UPS is switched on but the loads are powered through the bypass supply. When the mains fails or falls outside a preset range the inverter automatically powers the load
- back feed protection as standard: to avoid energy feeding back into the mains supply.

ADVANCED COMMUNICATION
- Compatible with TeleNetGuard for remote maintenance
- advanced, multi-platform communication, for all operating systems and network environments: **PowerShield²** monitoring and shut-down software included, with SNMP agent for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a communications cable for 'Plug and Play' PC connection
- RS232 serial port (double serial port optional)
- rear panel IEC socket for supplying local loads
- EPO (Emergency Power Off) contact for remote UPS shut-down
- interface card slot
- Microsoft certification.

MODELS	PWP 650	PWP 800	PWP 1000
POWER	6500VA/4600W	8000VA/5600W	10000VA/7000W
INPUT			
Rated voltage	230 Vac single-phase or 400 Vac three-phase with neutral		
Minimum voltage without battery intervention	170 Vac @ load 100% 140 Vac @ load 50%		
Rated frequency	50/60 Hz ± 5Hz		
BY PASS			
Voltage range	180 - 264 Vac (selectable in Economy Mode and SMART ACTIVE Mode)		
Frequency range	Selected frequency ±5Hz		
BATTERIES			
Recharge time	6 - 8 h		
OUTPUT			
Rated voltage	220 - 230 - 240 Vac selectable		
Static variation	± 1 %		
Dynamic variation	≤ 5% in 20 ms		
Wave form	Sinewave		
Voltage distortion with linear load	< 2%		
Voltage distortion with non-linear load	< 5%		
Frequency	50/60 Hz selectable or auto sensing		
Crest factor	3 : 1		
OVERLOAD CAPACITY			
100% < Load < 125%	2'		
125% ≤ Load < 150%	30 s		
Load ≥ 150%	0.5 s		
ENVIRONMENTAL			
Weight (kg)	133	134	135
Dimensions (hwd) (mm)	735x283x805		
Efficiency	Input single-phase 91% Input three-phase 92%		
Line-interactive/Smart Active Efficiency	98%		
Operating temperature	0 °C - 40 °C		
Humidity	< 95% non condensing		
Protection	Overload - short-circuit - overvoltage - undervoltage - temperature - low battery		
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3		
Communication	RS232 + remote contacts + communication interface slot		
Colour	Light grey RAL 7035		
Noise	<40 dBA at 1 m		
OPTIONS			
Extended runtime solutions	yes (with and without battery charger)		
Isolation transformer box (hwd) mm/kg	500x400x265 / 80	–	

Product characteristics can be customised to meet client specifications.

DETAILS



MULTI DIALOG

MDM / MDT

MDM 10-20 kVA single/single-phase and three/single-phase
MDT 10-80 kVA three/three-phase

MULTI DIALOG provides maximum protection for critical data processing networks and security applications, thanks to its advanced design, selectable operating modes and communications capabilities. Operating modes include: On-line, Economy, Smart-Active, Standby/Off and Voltage Stabilisation. Standard communications features include a front panel LCD with 128 potential messages, RS232 interfaces, EPO input, communications interface slot and **PowerShield²** management software.
The **MULTI DIALOG** series includes 10-15-20kVA single/single-phase, three/single-phase and 10-15-20-30-40-60-80 kVA three-phase models, and uses double conversion on-line technology (VFI). The load is powered continuously by the inverter with a filtered, stabilised and regulated sinewave supply. The input and output filters considerably increase the immunity of the load to mains disturbances and surges, even on bypass.

LCD remote panel

Inside view

LOW POWER CONSUMPTION

- On-line Mode: up to 92% efficiency can be achieved due to the use of IGBT technology, increasing to 98% in one of the other operating modes.
- Economy Mode: uses Line Interactive (VI) technology to power less critical loads from the mains supply for certain periods
- Smart Active: if the mains supply is out of range, the UPS will power the load from the inverter as an On-line UPS. When the mains supply returns to within range again, the UPS will monitor this for a certain period before selecting Line Interactive operation

SIMPLE TO INSTALL

- option to connect the UPS to single-phase or three phase mains supplies (MDM series).
- panel adjustment to offset voltage drop down long cable runs

MAXIMUM RELIABILITY AND AVAILABILITY

- connect up to 8 units in parallel or N+1 redundancy, of even different power ratings

HIGH LEVEL BATTERY RELIABILITY

- automatic battery test
- recharge compensated for temperature
- automatic or manual rapid charge (boost) – duration progammable

MAINTENANCE SIMPLICITY = LOW MTTR

For the 40 to 80 kVA models, open the door and remove the protective panel (standards requirement) and the power components - mounted on a sliding tray - can be pulled out to provide easy access to all the electrical and electronic components for maintenance and repair work. This particular feature means that the MTTR (Mean Time To Repair) is much lower than traditional UPS designs with less easily reached assemblies.
A large amount of maintenance information is available from the front mimic panel and LCD. In addition system operating parameters are software configurable via a local PC to allow new functions to be added or adjustments to be made to operating specifications.

SENSITIVE SUPPLY COMPATIBLE

- For power supply sources that are particularly sensitive to harmonics (generator sets or transformers of low power with respect to that of the UPS) it is often a good idea to take action to limit the harmonics injected back into the supply by the UPS.
  MULTI DIALOG AF series have an active filter and use high frequency Isolated Gate Bipolar (IGBT) Technology with Digital Signal Processor (DSP) control. The Active Filter helps to reduce harmonics generated by the UPS into the supply which could disrupt the operation of downstream generators and transformers whose rating is closely matched to that of UPS.

- advanced technology
Multi Dialog AF systems reduce harmonic distortion of the phase and neutral currents. The Digital Signal Processor (DSP) and the "current mode" instantly control and monitor the input current to maintain a perfect sinewave with less than 4% harmonic distortion

- maximum efficiency
Multi Dialog AF systems have low input distortion even at low loads and their overall efficiency is not affected by generator frequency variations or line impedance

- reduction of neutral current
Multi Dialog AF systems reduce the input neutrals current by up to 3.5 times their nominal rating to help avoid oversizing input protections and conductors

- maximum reliability
Multi Dialog AF systems are extremely reliable. Overall UPS performance is unaffected should the harmonic filter fail.

- excellent capabilities
input distortion: (THDi) less than 4%
input power factor: >0.99
performance: up to 93%.

Multi Dialog can also be supplied without the Active Filter for installations less sensitive to current harmonics.

OTHER CHARACTERISTICS

- 0.8 power factor makes Multi Dialog suitable for powering ICT and industrial loads
- high level diagnostics: event log with 128 messages, states, measurements and alarms - available from the built-in LCD in several languages
- reduced noise levels: high frequency inverter bridge
- back feed protection standard: to avoid energy feeding back into the mains supply (in compliance with CEI 11-20; DK5600)
- power factor correction (input power factor, close to 1)
- by pass may be deactivated to allow operation as a frequency converter (at 50 or 60 Hz)
- emergency operation: the UPS can be set to operate only when the mains fails (for emergency lighting)

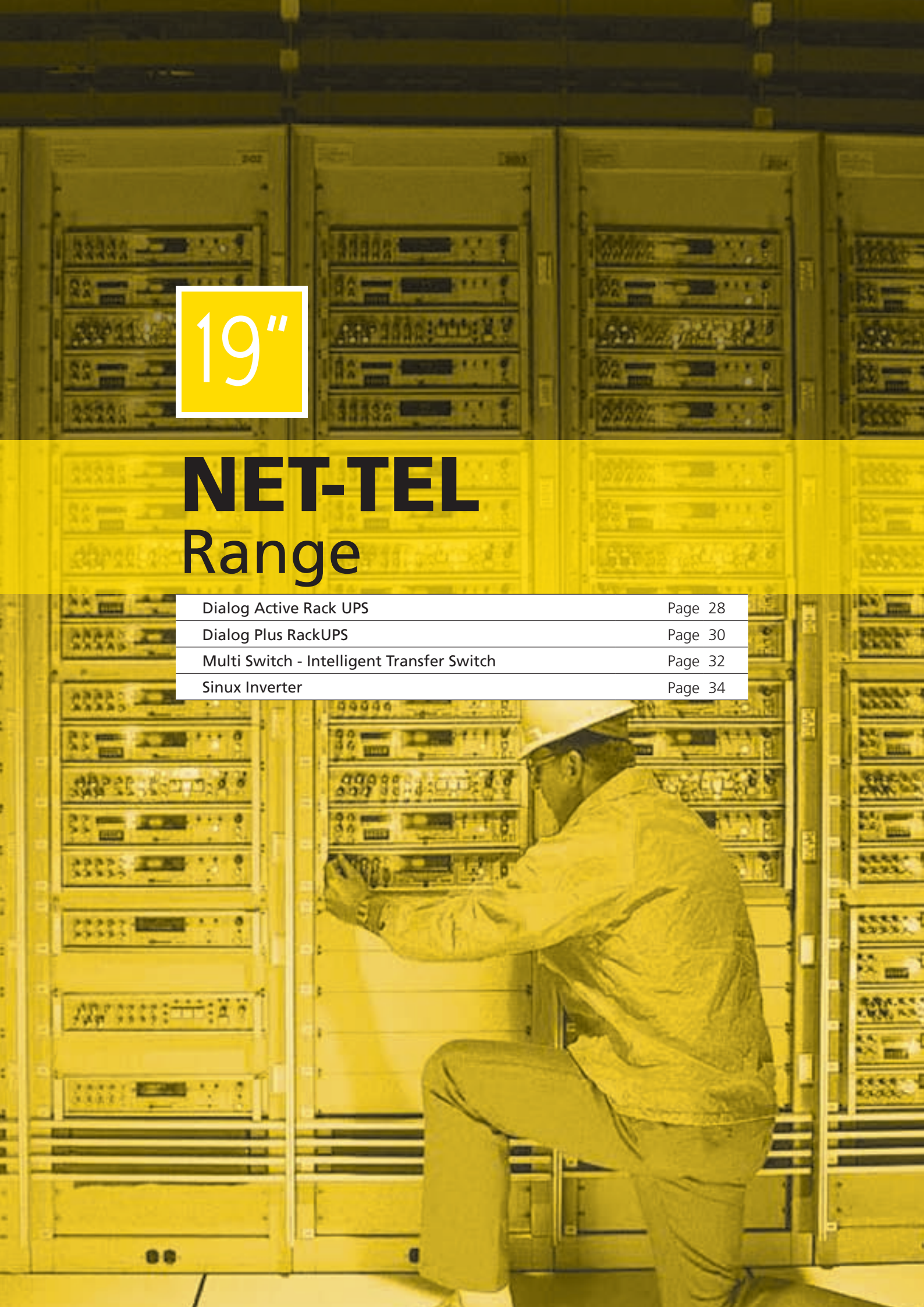
ADVANCED COMMUNICATION

- compatible with TeleNetGuard for remote maintenance
- advanced, multi-platform communication, for all operating systems and network environments: **PowerShield²** supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a cable for direct connection to the PC (Plug and Play)
- double RS232 serial ports
- network adapter slot for SNMP agent
- Emergency Power Off (EPO) shutdown input contact
- remote control mimic panel.

MDM MODELS	MDM 10 - AF	MDM 15 - AF	MDM 20 - AF
INPUT			
Rated voltage	230 Vac single-phase or 400 Vac three-phase + N		
Voltage range	± 20%		
Frequency range	45 ÷ 65 Hz		
Power factor	>0.99		
Current distortion	sinewave absorbtion THDi<3%		
BY PASS			
Rated voltage	230 Vac		
Number of phases	1		
Permitted voltage range	± 15% (selectable from ± 5% to ± 25%)		
Rated frequency	50/60 Hz		
Permitted frequency range	± 2% (selectable from ± 1% to ± 5%)		
BATTERIES			
Type	Lead, flooded and VRLA AGM / GEL; NiCd		
Recharge time	6 h		
OUTPUT			
Rated power (kVA)	10	15	20
Active power (kW)	8	12/10,5*	16/12*
Number of phases	1		
Rated voltage (V)	230		
Voltage regulation range	200 ÷ 243 V		
Crest factor (Ipeak/Irms)	3 : 1		
Waveform	Sinewave		
Distortion with linear load	2%		
Static stability	± 1%		
Dynamic stability	± 5% in 10 ms		
Frequency	50 / 60 Hz selectable		
Overload	110% 125% 150% of the rated current for 5 h/10'/1'		
ENVIRONMENTAL			
Weight (kg)	from 105 to 243	from 110 to 330	from 125 to 345
Dimensions (hwd) (mm)	1200x450x750		
Input	Single-phase or three-phase input + neutral		
Remote signalling	volt free contacts		
Remote controls	EPO and bypass		
Communication	Double RS232/C + remote contacts + communication interface slot		
Operating temperature	0 °C - 40 °C		
Relative humidity	< 95% non condensing		
Colour	Light grey RAL 7035		
Noise	<56 dBA at 1 m		
Protection rating	IP20		
Efficiency	> 92% in On-Line Mode, > 98% in Economy Mode/Smart Active Mode/Standby-Off Mode/AVS Mode		
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3		

*Version with single phase input

MDT MODELS	MDT10 - AF	MDT15 - AF	MDT20 - AF	MDT30 - AF	MDT40 - AF	MDT60 - AF	MDT80 - AF
INPUT							
Rated voltage	400 Vac three-phase + N						
Voltage range	± 20%						
Frequency range	45 ÷ 65 Hz						
Power factor	>0.99						
Current distortion	sinewave absorbtion THDi<3%						
BY PASS							
Rated voltage	400 Vac						
Number of phases	3 + N						
Permitted voltage range	± 15% (selectable from ± 5% to ± 25%)						
Rated frequency	50/60 Hz						
Permitted frequency range	± 2% (selectable from ± 1% to ± 5%)						
BATTERIES							
Type	Lead, flooded and VRLA AGM / GEL; NiCd						
Recharge time	6 h				4-8 h		
OUTPUT							
Rated power (kVA)	10	15	20	30	40	60	80
Active power (kW)	8	12	16	24	32	48	64
Number of phases	3 + N						
Rated voltage (V)	380 - 400 - 415 selectable						
Voltage regulation range	346 ÷ 422 V						
Crest factor (Ipeak/Irms)	3 : 1						
Waveform	Sinewave						
Distortion with linear load	2%						
Static stability	± 1%						
Dynamic stability	± 5% in 10 ms						
Frequency	50/60 Hz selectable						
Overload	110%125% 150% of the rated current for 5h/10'/1'						
ENVIRONMENTAL							
Weight (kg)	from 110 to 258	from 115 to 335	from 130 to 350	from 144 to 370	160	180	192
Dimensions (hwd) (mm)	1200x450x750				1400x500x740		
Input	Three-phase + N						
Remote signalling	volt free contacts						
Remote controls	EPO and bypass						
Communication	Double RS232/C + remote contacts + communication interface slot						
Operating temperature	0 °C - 40 °C						
Relative humidity	<95% non condensing						
Colour	Light grey RAL 7035						
Noise	<56 dBA at 1 m						<60 dBA at 1 m
Protection rating	IP20						
Efficiency	> 92% in On-Line Mode, > 98% in Economy Mode/Smart Active Mode/Standby-Off Mode/AVS Mode						
Compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3						



19"

NET-TEL
Range

Personal computers | Small computers network | Local Area Networks (LAN) | Workstations | Servers | EPOS (Electronic Point Of Sales) system | Data Centers | Industrial PLCs | Cash registers | Electro-medical devices | Emergency devices (lights/alarms) | Telecommunication devices | e-Business (Server Farms, ISP/ASP/POP) | Industrial processes

DIALOG ACTIVE RACK

500 - 2000 VA
single-phase

USB UNIVERSAL SERIAL BUS

For advanced communication and outstanding performance (including Power Share and a true SINEWAVE output at all times), **DIALOG ACTIVE RACK** is the ideal solution for larger network users requiring total control of their power system.
The **DIALOG ACTIVE RACK** series comprises the 500-750-1000-1500-2000VA models and uses digital Line Interactive (VI) technology. The load is powered from the mains through an AVR to stabilise brownout, sag and surge voltages, and EMI filters to suppress spikes and transients.
When the mains fails, the load is powered by the inverter with a true SINEWAVE to provide sufficient runtime for computer system shutdown using the **PowerShield²** software supplied as standard. The UPS also incorporates a filtered socket for PC network and telephone line cable protection.

CHARACTERISTICS

- Mains power supply stabilisation and filtering (Line Interactive VI technology with AVR and filters for atmospheric disturbances suppression)
- high quality sinewave output (distortion <2%)
- high level immunity to surges (6kV according to IEC801-5)
- cold start capability: the UPS can power up without a mains supply present
- integrated protection for PC networks and telephone line/modem connections RJ45-RJ11
- high reliability with built-in automatic battery test feature
- auto restart at power-up.

ADVANCED COMMUNICATION

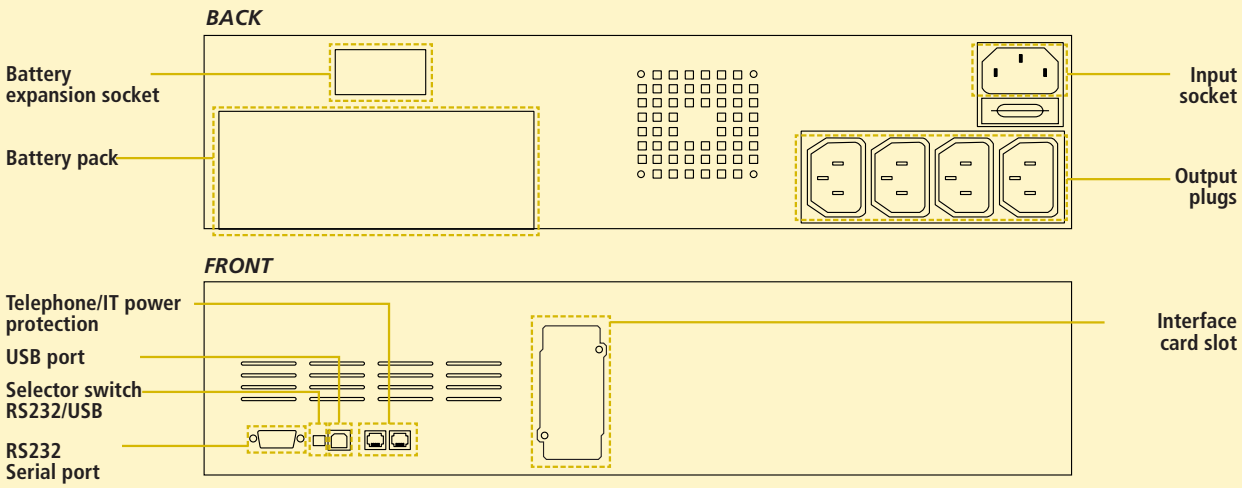
- Advanced, multi-platform communication for all operating systems and network environments: **PowerShield²** monitoring and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems
- USB or RS232 serial port (selectable)
- slot-in SNMP network adapter card.

2-YEAR WARRANTY

MODELS	DAR 50	DAR 75	DAR 100	DAR 150	DAR 200
POWER	500VA / 335W	750VA / 500W	1000VA / 670W	1500VA / 1000W	2000VA / 1340W
INPUT					
Rated voltage	220 ÷ 240 Vac				
Voltage range	220 ÷ 240 Vac (-25%, +21%)				
Frequency	50/60 Hz auto sensing ± 5Hz				
OUTPUT					
Rated voltage	230 Vac ± 2%				
Voltage on mains operation	automatically corrects output voltage from -15% to +15% with input fluctuation within ±25%				
Frequency	50 - 60 Hz auto sensing				
Voltage on battery operation	230 Vac (± 5%)				
Waveform	Sinewave with distortion <2%				
Output sockets	4 IEC 320 10A				
BATTERIES					
Type	VRLA AGM Maintenance-free lead-acid				
Recharge time	6-8 h				
ENVIRONMENTAL					
Weight (kg)	19	20	21	26	34
Dimensions (hwd) (mm)	2Ux19"x450				3Ux19"x450
Operating temperature	0 °C - 40 °C, ideal for battery 15 °C - 25 °C				
Relative humidity	< 95% non condensing				
Protection	Overload - short-circuit - overvoltage - undervoltage - temperature - low battery				
Safety compliance	EN 62040-1-1 and Directive EEC 73/23, Directive EEC 93/68; EN 62040-3				
EMC Conformance	EN 62040-2 and Directive EEC 89/336				
Communication	USB / RS232 + communication interface slot				
Surge capability	IEC 801-5 6 KV 1.2 / 50 µs; 3KA 8/20 µs differential				
AC/AC Efficiency	98 %				
PC NET/Tel protection	surge protection Net/Tel type RJ45/RJ11				
Colour	Dark grey RAL 5004				
Noise	<40 dBA aT 1 m				
OPTIONS					
Extended runtime solutions	–				yes
External manual bypass (hwd) mm/kg	2Ux438x360 - rack version weighs 6,8 (see Multipass) 180x300x115 - box version weighs 3,3 (see Multipass)				

Product characteristics can be customised to meet client specifications.

DETAILS



DIALOG PLUS RACK

700 - 3000 VA
single-phase

Designed for Microsoft® Windows® XP

TÜVRheinland GS geprüfte Sicherheit

For outstanding power protection and communication **DIALOG PLUS RACK** is the best solution for sensitive and "mission-critical" applications.
The **DIALOG PLUS RACK** series comprises the 700-1000-1500-2200-3000VA models and uses double conversion technology (VFI). The load is powered continuously by the inverter with an EMI filtered, stabilised and regulated sinewave supply.
The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges, even on bypass. The UPS can power the load for long periods (using battery extension packs) or provide sufficient runtime to allow shut-down of the protected computer systems using the **PowerShield²** software, supplied as standard, for Windows 95, 98, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, NT 4.0, Novell operating systems.

DIALOG PLUS RACK -ER models are supplied with a larger internal charger and with their matching external battery extension packs can achieve long back up times.

CHARACTERISTICS
- Reliable, stabilised, filtered voltage double on-line conversion technology (VFI according to EN62040-3 specifications) with filters for the suppression of atmospheric disturbances
- high overload capability (up to 150%)
- auto restart when mains power returns (programmable)
- GS-TÜV certification
- power factor correction with sinusoidal input to ensure a low impact on the mains supply (UPS input power factor, close to 1)
- wide input voltage range (110-300Vac) to reduce battery usage
- integrated protection for PC networks and telephone line/modem connections RJ45-RJ11
- option to extend the back up time to several hours
- programming of operating functions via software
- timer for scheduled shut-down (software programmable)
- high level reliability of the batteries (automatic and manual test)
- high level reliability of the UPS (full microprocessor control)
- breaker based input protection.

ADVANCED COMMUNICATION
- Advanced, multi-platform communication for all operating systems and network environments: **PowerShield²** supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Novell, Linux, Mac Os 9.x, Mac Os X operating systems. The UPS is supplied with a communication cable for Plug and Play PC connection
- UPS tools configuration software
- Emergency Power Off (EPO) contact
- RS232 serial port
- slot-in SNMP network adapter card.

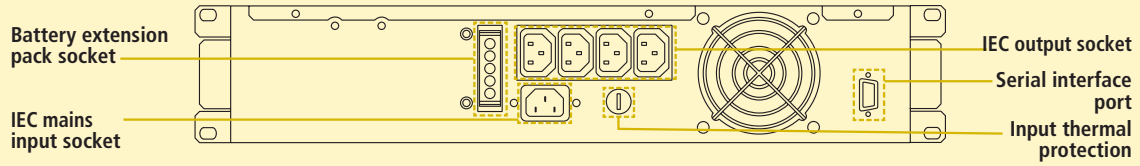
2-YEAR WARRANTY

MODELS	DLPR 70	DLPR 100	DLPR100 ER	DLPR 150	DLPR 220	DLPR220 ER	DLPR 300	DLPR300 ER
POWER	700VA / 490W	1000VA / 700W		1500VA / 1050W	2200VA / 1540W		3000VA / 2100W	
INPUT								
Rated voltage	220 - 230 - 240 Vac							
Minimum input range	110V up to 60% of load/120V from 60% to 70% of load 140V from 70 to 80% of load/160V from 80% to 100% of load							
Maximum input range	300 V							
Rated frequency	50/60 Hz ± 5Hz							
Rated current (A)	2.5	3.5	5.2	6.8	10	13.8	14.4	16
Power factor	> 0.97							
BY PASS								
Voltage tolerance	static ± 1.5%							
Frequency tolerance	± 0,5%							
BATTERIES								
Type	VRLA AGM Maintenance-free lead-acid							
Recharge time	4 h							
OUTPUT								
Rated voltage	220 or 230 or 240 Vac selectable ± 1,5%							
Waveform	Sinewave							
Voltage distortion	< 2%							
Frequency	50 or 60 Hz selectable							
Frequency tolerance	± 0,5 %							
Crest factor (Ipeak/Irms)	3 : 1 (up to 100% of load)							
Overload	110% 30'; 130% 30"; 150% 10"							
Output sockets	4 IEC 320 10A						4 IEC 320 10A + 1 IEC 320 16A	
ENVIRONMENTAL								
Weight (kg)	13	16	9	21	30	13	31	14
Dimensions (hwd) (mm)	2Ux19"x390			2Ux19"x480	3Ux19" x560	2Ux19" x480	3Ux19" x560	2Ux19" x480
AC/AC Efficiency	90%							
Communication	RS232 + communication interface slot							
Operating temperature	O °C - 40 °C, ideal for battery 15 °C - 25 °C							
Relative humidity	< 95% non condensing							
Protection	Overload - short-circuit - overvoltage - undervoltage - temperature - low battery							
Safety compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3							
Surge capability	3KA 8/20 µs							
Colour	Dark grey RAL 5004							
Noise	<40 dBA at 1 m							
OPTIONS								
Extended runtime solutions	–	yes						
External manual bypass (hwd) mm/kg	2Ux438x360 - rack version weighs 6,8 (see Multipass) 180x300x115 - box version weighs 3,3 (see Multipass)							

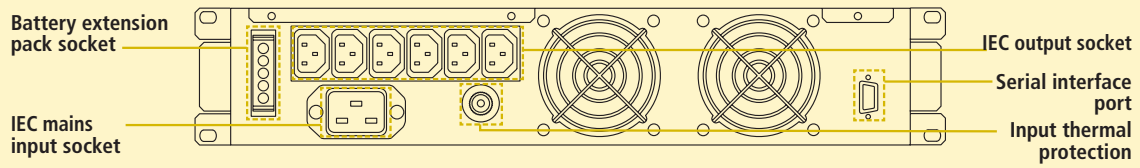
Product characteristics can be customised to meet client specifications.

DETAILS

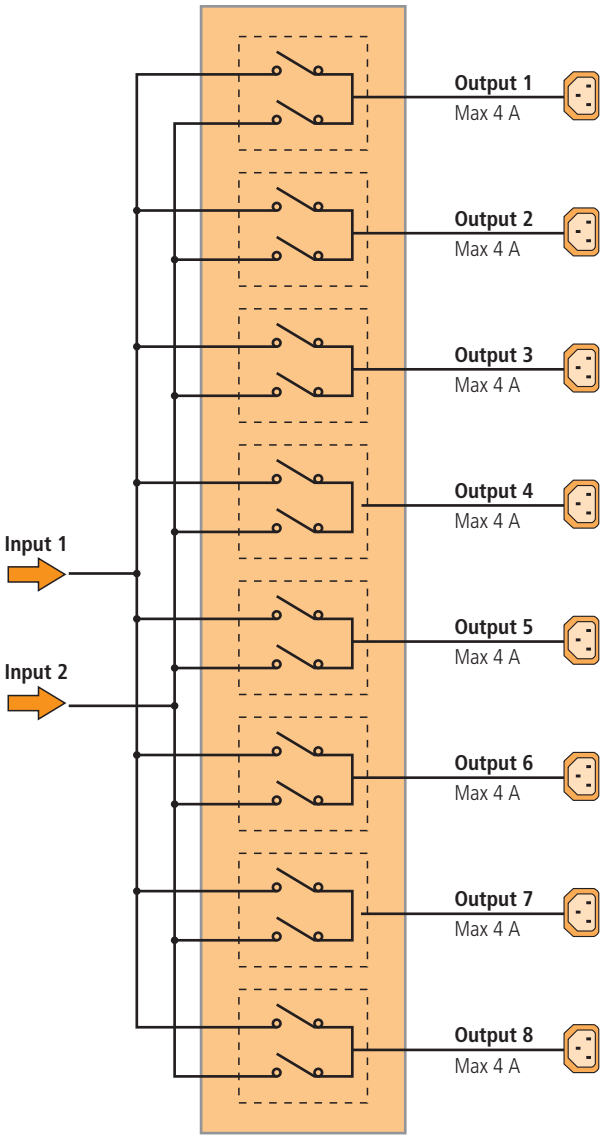
DLPR 70
DLPR 100
DLPR 100 ER
DLPR 150



DLPR 220
DLPR 220 ER
DLPR 300
DLPR 300 ER



MULTI SWITCH



Multi-SWITCH improves electrical supply continuity. The principle of operation guarantees a higher reliability level than that achieved using a single UPS (on-line with automatic bypass) or several UPS in parallel.

PRINCIPLE OF OPERATION

The **Multi-SWITCH** provides electrical distribution and remote management for up to eight network users, powered from two direct mains supplies or UPS or a combination of both.
The **Multi-SWITCH** can connect each user (up to eight, each with a maximum power demand not greater than 4A), to either of the two power sources (A and B). Load demand is shown on the LCD. See "principle of operation" diagram.

PROTECTION AGAINST POWER SUPPLY FAILURES

If one of the two power source fails or falls outside specification, **Multi-SWITCH** will transfer the connected loads to the second power source (switching is instantaneous even if the two sources are in phase).

PROTECTION AGAINST LOAD FAULTS

If a fault occurs with one of the loads (for example due to a short-circuit or overload), **Multi-SWITCH** will disconnect the load to prevent disruption to the others. **Multi-SWITCH** protects sensitive installations from both power and hardware faults.

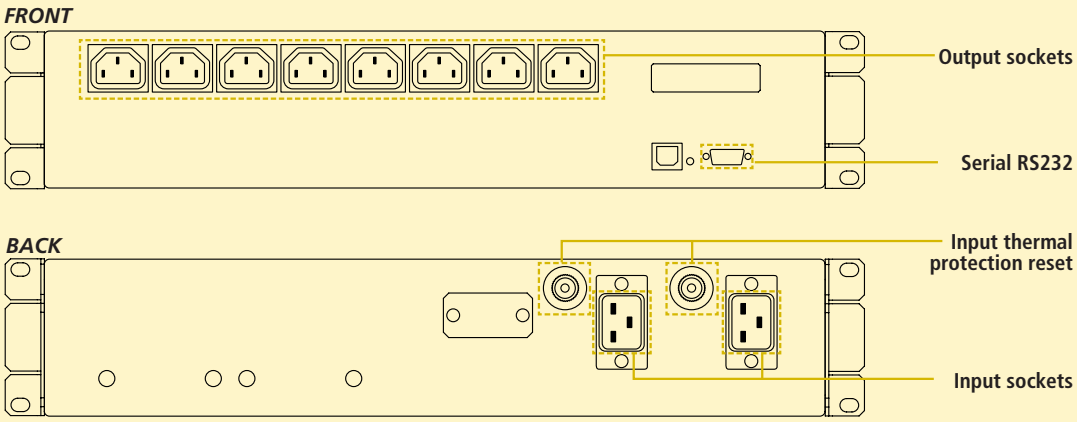
CHARACTERISTICS

- Full protection against mains failures and load faults
- flexible power sources: Multi-SWITCH can be powered from 2 different sources (2 mains supplies, 2 UPS or a combination of both. Note than the UPS can be of a different size)
- designed for installation in a 19" rack-mount cabinet
- LCD to provide measurements/alarms/states information
- remote monitoring serial interface
- no signal connection is required between Multi-SWITCH and the power sources or supplied hardware
- configuration software provided as standard
- slot-in SNMP network adapter card.

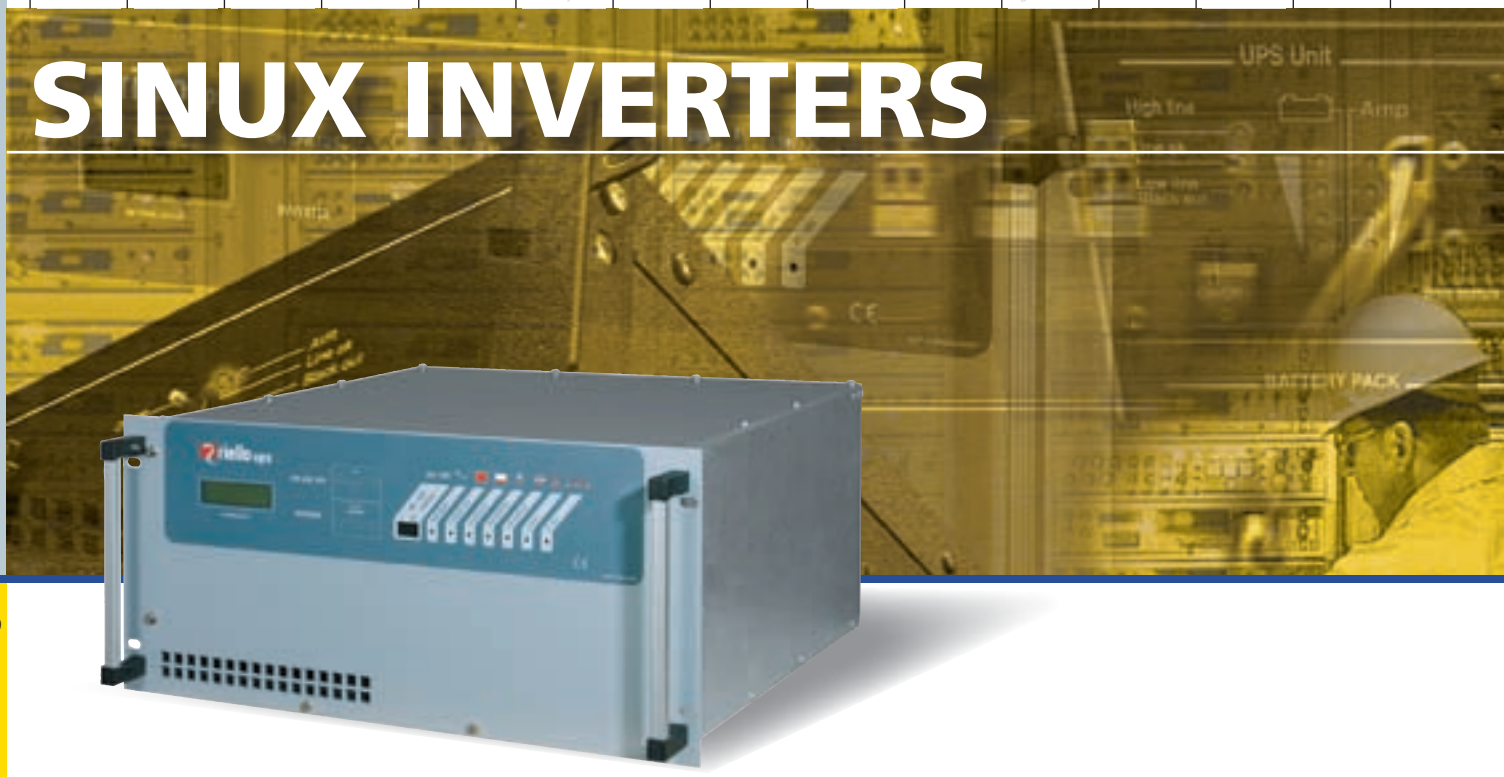
MODELS	MSW (2 input - 8 output)
POWER	8x4A output sockets
INPUT	
Input voltage	180 - 276 Vac
Rated frequency	50/60 Hz
Maximum load for each input (A)	16
Input sockets	2 IEC 320 (16A)
OUTPUT	
Output voltage	selection of one of the two input sources
Maximum load for each output (A)	4
Output sockets	8 IEC 320 10A
ENVIRONMENTAL	
Weight (kg)	10
Dimensions (hwd) (mm)	2Ux19"x360
Operating temperature	0 °C - 40 °C
Relative humidity	< 95% non condensing
Protection	Overcurrent - overvoltage - undervoltage - back-feed protection
Safety compliance	EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3
Maximum altitude	3000 m
Maximum altitude (storage conditions)	6000 m; 45 °C
Communication	RS232
Enclosure protection rating	IP 20
Colour	Dark grey RAL 5004
Noise	<35 dBA at 1 m
OPTIONS	
Network adapter	slot-in SNMP network adapter card for Multi-SWITCH "N" models

Product characteristics can be customised to meet client specifications.

DETAILS



SINUX INVERTERS

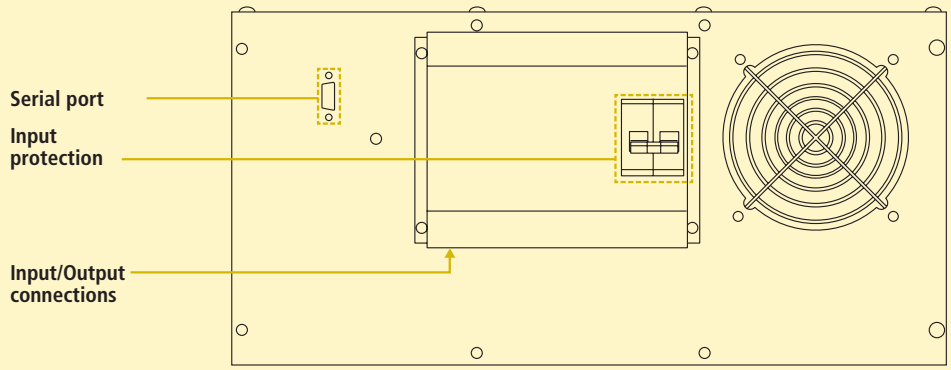


Sinux is a range of 12/23/48/110 Vdc inverters with a 230 Vac 50Hz sinewave output.
The output is galvanically isolated thanks to a built in transformer.
The inverters are very efficient and have a wide input voltage window, that allows them to be used directly with photovoltaic (solar) panels.

CHARACTERISTICS

- **Standard galvanic isolation**: the system has a built in transformer to ensure galvanic isolation.
- **Wide input voltage range**: the inverters have a wide input range and are compatible with photovoltaic systems and do not require extra regulation hardware.
- **Full diagnostics:** the inverters provide both visual and audible status and diagnostic information
- **Built-in protection**. Protection includes: over and under voltage, reverse polarity, overloads, short circuits and over temperature
- **Automatic restart**: the inverters auto restart when the alarm condition is resolved
- **Bypass** optional
- optional **LCD display**
- **dry contacts interface board:**
  - ***standard:*** dc voltage present; dc voltage low
  - ***optional:*** overload; inverter fault; overtemperature
- **Special versions** available on request.
- **Compatible options** available on request.

DETAILS



MODELS	POWER	INPUT		OUTPUT		ENVIRONMENTAL		AVAILABLE OPTIONS		
	(W)	Rated voltage	Voltage range	Output current (A)	Overload (W) for 5"	Weight (kg)	Dimensions (hwd) (mm)	By-pass	LCD Display	Remote contacts
SINUX INVERTERS S12 (12 Vdc input)										
S12 120	115	12 V	10,2 - 18 V	0,5	300	13	4Ux19"x410		•	•
S12 160	161			0,7	400	15			•	•
S12 350	345			1,5	600	30			•	•
S12 460	460			2	800	32	4Ux19"x510		•	•
S12 580	575			2,5	1000	35			•	•
S12 690	690			3	1200	40	5Ux19"x510		•	•
S12 800	805			3,5	1400	45			•	•
SINUX INVERTERS S24 (24 Vdc input)										
S24 030	30	24 V	19 - 43 V	0,13	50	3	2Ux19"x160			
S24 230	230			1	600	13	4Ux19"x410	•	•	•
S24 320	322			1,4	800	15		•	•	•
S24 530	529			2,3	1000	19		•	•	•
S24 780	782			3,4	1200	30		•	•	•
S24 920	920			4	1600	32	4Ux19"x510	•	•	•
S24 1K1	1150			5	2000	35		•	•	•
S24 1K4	1380			6	2500	40	5Ux19"x510	•	•	•
S24 1K6	1610			7	2800	45		•	•	•
S24 1K8	1840			8	3000	52		•	•	•
S24 2K7	2760			12	4000	60	5Ux19"x710	•	•	
S24 3K6	3680			16	5000	72		•	•	
S24 4K1	4140			18	6000	80		•	•	
SINUX INVERTERS S48 (48 Vdc input)										
S48 030	30	48 V	39 - 60 V	0,13	50	3	2Ux19"x160			
S48 100	100			0,45	130	3,5				
S48 150	150			0,65	230	4				
S48 320	322			1,4	800	13	4Ux19"x410	•	•	•
S48 460	460			2	1000	15		•	•	•
S48 690	690			3	1200	19		•	•	•
S48 920	920		39 - 80 V	4	1500	30		•	•	•
S48 1K1	1150			5	2000	32	4Ux19"x510	•	•	•
S48 1K4	1380			6	2500	35		•	•	•
S48 1K7	1725			7,5	3500	40	5Ux19"x510	•	•	•
S48 2K0	2070			9	4000	45		•	•	•
S48 2K5	2530			11	4500	52		•	•	•
S48 3K4	3450			15	6000	60	5Ux19"x710	•	•	
S48 4K1	4140			18	7000	66		•	•	
S48 5K0	5060			22	8000	72		•	•	
S48 6K2	6210			27	9000	78		•	•	
S48 6K9	6900		39 - 60 V	30	10000	83		•	•	
SINUX INVERTERS SK1 (110 Vdc input)										
SK1 030	30	110 V	88 - 145 V	0,13	50	3,5	2Ux19"x160			
SK1 100	104			0,45	130	4				
SK1 150	150			0,65	180	4				
SK1 320	322			1,4	800	13	4Ux19"x410	•	•	•
SK1 460	460			2	1000	15		•	•	•
SK1 690	690			3	1200	19		•	•	•
SK1 920	920			4	1500	30		•	•	•
SK1 1K1	1150			5	2000	32	4Ux19"x510	•	•	•
SK1 1K4	1380			6	2500	35		•	•	•
SK1 1K7	1825			7,5	3500	40	5Ux19"x510	•	•	•
SK1 2K0	2070			9	4000	45		•	•	•
SK1 2K5	2530			11	4500	50		•	•	•
SK1 2K8	2875			12,5	5000	55		•	•	•
SK1 3K5	3450			15	6000	60	5Ux19"x710	•	•	
SK1 4K1	4140			18	7000	66		•	•	
SK1 5K0	5060			22	8000	72		•	•	
SK1 6K2	6210			27	9000	78		•	•	
SK1 6K9	6900			30	10000	83		•	•	

Product characteristics can be customised to meet client specifications.

INDUSTRY
Range

MASTER PLUS

100 - 200 kVA
three-phase/three-phase

MINIMUM INPACT ON SUPPLIES - EASY SOURCE

Master Plus technology removes the problems of over sizing upstream power sources, whilst improving load power factors and current harmonics. The UPS features the latest input current absorption techniques including progressive rectifier start-up and the option to reduce battery charging currents. These features make Master Plus one of the most generator compatible and environmentally friendly UPS available.

ABSOLUTE PROTECTION

Master Plus is an on-line double conversion UPS (VFI SS 111 in accordance with IEC EN 62040-3) with a transformer isolated inverter. Master plus has a compact foot print and high quality output to provide the ultimate power protection for "mission critical" applications: data processing, telecommunications, industrial processes, security and electro-medical systems.

BATTERY CARE SYSTEM: MAXIMUM LIFETIME POTENTIAL

Traditionally, when a mains supply is present the UPS charges its batteries. Battery power is used for the inverter should the input supply fail. Efficient battery management and care is therefore essential to the overall performance of the UPS in an emergency. The Master Plus Battery Care System consists of a range of features designed to provide optimum performance and enhanced operating life:

- Dual level charging regime to optimise recharge currents and lower recharge times
- Temperature compensation and deep discharge protection to reduce overall battery aging
- Charge blocking system to reduce electrolyte consumption and lengthen the life of VRLA batteries
- Predictive battery testing to spot potential battery deterioration and failure

Master Plus is also compatible with different battery technologies: open-vase lead acid and AGM and Gel VRLA, NiCd.

FLEXIBILITY

Master Plus is suitable for a wide range of applications including IT and the most demanding industrial environments. With a broad range of accessories and options, complex configurations and system architectures can be achieved to guarantee maximum power availability and the option to add new UPS without interruption to existing users.

Using the Riello UPS Group Synchroniser (USG) and Parallel Systems Joiner (PSJ) sophisticated inter group parallel and redundant systems can be achieved to provide the highest possible levels of resilience and availability.

EASE OF INSTALLATION

Master Plus is compact with a foot print of only 0.64sqm for a 200kVA system. Front access to internal assemblies and top panel ventilation make space allocation within confined data processing or plant rooms easy. Master Plus can be placed against a wall as there is no requirement for rear or side panel access for maintenance or ventilation.

Mimic panel

ADVANCED COMMUNICATION

- Compatible with TeleNetGuard for remote maintenance
- Advanced, multi-platform communication, for all operating systems and network environments: **PowerShield²** supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a cable for direct connection to the PC (Plug and Play)
- RS232 double serial port
- Slot for installation of the mains adapter; EPO contact (Emergency Switching Device) for switching off the UPS with a remote emergency switch.
- Remote mimic panel (LED or LCD).

OPTIONS
Isolation transformer module
UPS Group Syncroniser (see UGS page 42)
Hot connection device (see PSJ page 42)
Interface for generator
LED remote status panel
LCD based remote control panel
Closed Loop parallel kit option (to be ordered with the UPS)
Empty battery cabinets for prolonged runtime

MODELS	MP 100	MP 120	MP 160	MP 200
POWER (kVA)	100	120	160	200
INPUT				
Nominal voltage	380 - 400 - 415 Vac three-phasee			
Voltage tolerance	400 V ± 20%			
Frequency	45 ÷ 65 Hz			
Power factor	>0.95 in the 12MP HC version			
Current distortion	<3% in the 12MP HC version			
Soft start	0 ÷ 100% in 120" configurable			
Permitted frequency tolerance	± 2% (selectable from ± 1% to ± 5% from the front panel)			
Standard features	Back Feed protection; separable bypass line			
BATTERY				
Type	Lead, flooded and VRLA AGM / GEL; NiCd			
AC ripple	<1%			
Temperature compensation	-0,5 Vx °C			
OUTPUT				
Rated power (kVA)	100	120	160	200
Active power (kW)	80	96	128	160
Number of phases	3 + N			
Nominal voltage	380 - 400 - 415Vac three-phase + N			
Static stability	± 1%			
Dynamic stability	± 5% in 10 msec.			
Voltage distortion with linear load	<1%			
Voltage distortion with distorting load	<3%			
Frequency	50 or 60 Hz configurable			
Waveform	Sinusoidal			
Peak factor	3:1			
Overload	110% for 60'; 125% for 10'; 150% for 1'			
SYSTEM				
Remote signalling	Voltage-free contacts			
Remote commands	EPO and bypass			
Communication	double RS232 + remote contacts + 2 communication interface slots			
Performance	Up to 94%			
Dimensions (HxLxD) (mm)	1900x800x800			
Weight (kg)	600	650	750	800
Noise level	63 ÷ 68 dBA a 1 m			
Operating temperature	0 °C / +40 °C			
Relative humidity	<95% non condensing			
Protection rating	IP20			
Colour	RAL 7035			
Standards	Directives EEC 73/23 - 93/68 - 89/336 Safety IEC EN 62040-1; EMC IEC EN 62040-2; Performance IEC EN 62040-3			
Classification as per IEC 62040-3	(Voltage Frequency Independent) VFI - SS - 111			

MASTER DIALOG 12RT

250/800 kVA
three-phase/three-phase

MASTER DIALOG 12 RT provides maximum protection for vital 'mission-critical' networks, security applications (electromedical) and industrial applications thanks to its outstanding mechanical and electrical design.The **MASTER DIALOG 12RT** series runs from 250 to 800 kVA three-phase models and uses double conversion on-line technology (VFI) with an isolation transformer on the inverter output.
The load is powered continuously by the inverter with a filtered, stabilised and regulated sinewave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges.
MASTER DIALOG 12RT is supplied with **PowerShield²** software as standard and can be remotely monitored using the TeleNetGuard system from anywhere in the world. Additional battery extension packs allow the standard battery runtime to be extended up to several hours.

HIGH RELIABILITY
- Extremely high short-circuit current to ensure compatibility with the most difficult transformer applications (lighting, drives and industrial processes) and an isolation transformer on the inverter output.
- full microprocessor control with no-break static and manual bypasses,
- IGBT technology.

MINIMUM IMPACT ON SUPPLIES - EASY SOURCE
- Input current distortion <4% for the Master Dialog "CLEAN" version with sinusoidal absorption to remove the risk of resonance with other input supply users or phase shift capacitor sets. The absorbed current distortion is independent of input supply parameters such as impedance. This enables Master Dialog to deliver maximum performance levels regardless of the installation environment. With these input features Master Dialog can achieve significant savings in terms of sizing and power supply sources - isolation transformers and generators over less sophisticated power systems.

MAXIMUM BATTERY CARE
- temperature compensating charger
- battery deep discharge protection
- built-in automatic and manual battery test feature

SIMPLE TO INSTALL
- option to regulate the output voltage and offset voltage drops down long cable runs

MAXIMUM RELIABILITY AND AVAILABILITY
- connect up to 8 units in parallel or N+1 redundancy, even of different power ratings.
  The UPS continue to operate in parallel even if one of the interconnecting communication cables is disconnected (Closed Loop).

LOW CONSUMPTION LEVELS
- Master Dialog can achieve efficiencies >98% thanks to a selectable Economy Mode which can be used in stable electrical environments to provide power supply continuity should the mains fail.

OTHER CHARACTERISTICS

- reliable, filtered, stabilised and regulated sinewave output (double conversion on-line technology VFI according to EN62040-3 specifications) with filters for atmospheric disturbance suppression
- 0.8 power factor makes Master Dialog suitable for powering ICT and industrial loads
- high level diagnostics: event log with 128 messages, states, measurements and alarms - available from the built-in LCD in several languages
- BACK FEED protection: to avoid energy feeding back into the mains supply should a fault occur.

OPTIONS

- **UGS** - ***UPS Group Synchroniser***
  Allows 2 or more UPS not in parallel to remain synchronized even during a power failure. The UGS also enables a RIELLO UPS to be synchronised with an independent power source, even of a different power rating. The UGS is often used with the Parallel Systems Joiner (PSJ).
- **PSJ** - ***Parallel Systems Joiner***
  Connects two UPS groups operating in parallel configurations through a power coupling switch. The Slave UPS Group is permanently synchronised to the Master group. Should one of the UPS in one of the parallel groups fail, the PSJ will automatically connect the remaining UPS to the other group via an external bypass.
- isolation transformers
- various lead acid battery types including 5 year, 10 year and 20 year design life, VRLA, NiCad options and runtimes up to several hours
- communications software
- automatic battery circuit breaker (for remote control)
- solutions for low input current distortion.

mimic panel

ADVANCED COMMUNICATION

- Compatible with TeleNetGuard for remote maintenance
- advanced, multi-platform communication, for all operating systems and network environments: **PowerShield²** supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a cable for direct connection to the PC (Plug and Play)
- RS232 serial port
- volt-free signal contacts
- EPO (Emergency Power Off) shutdown input contact
- input for switching to bypass by remote signal
- LCD or LED-based remote control panel
- generator interface: enables desynchronisation of the UPS output from a generator supply which may be subject to phase and frequency variations. The interface also enables more economic use of the battery charger.

SPECIFIC SOLUTIONS

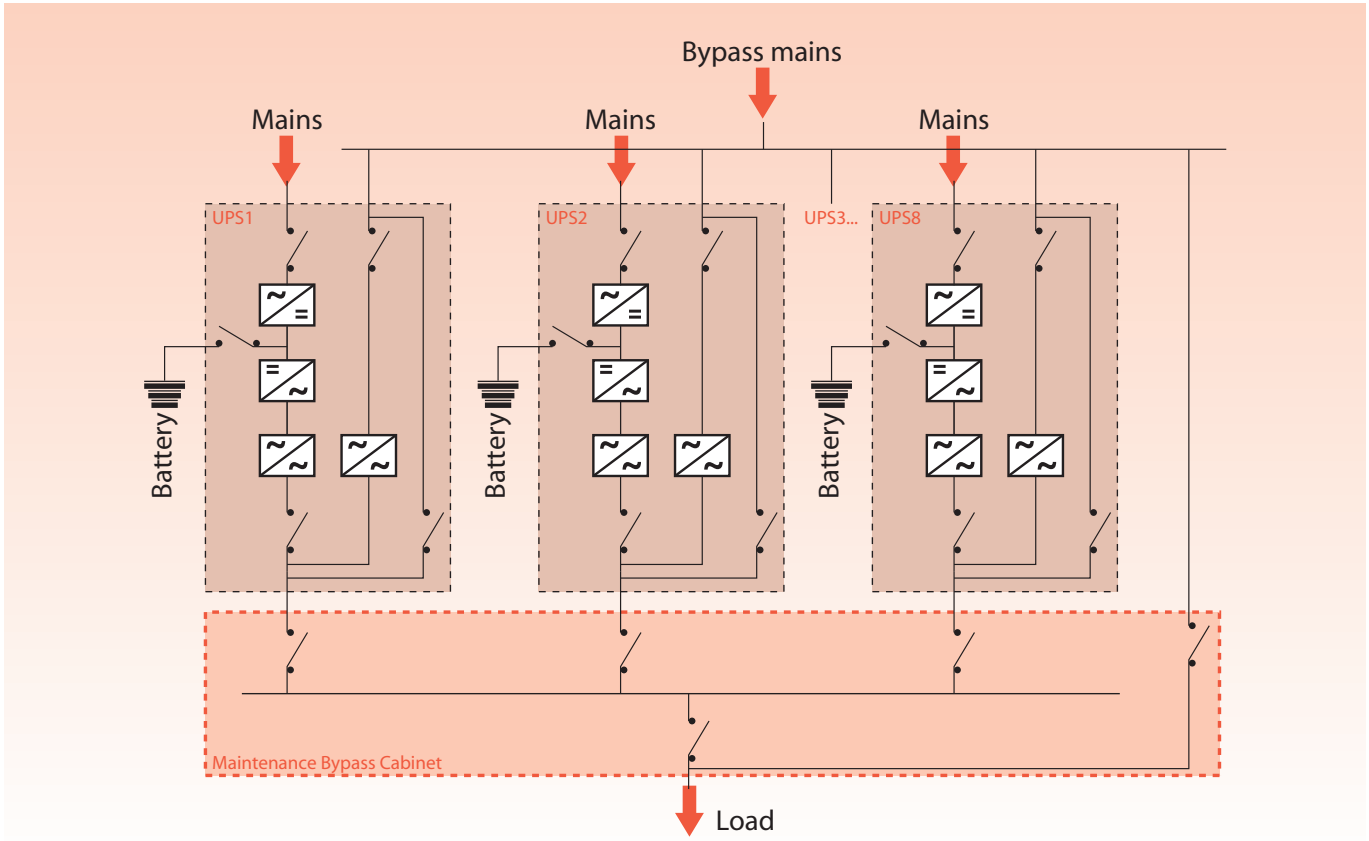
The UPS can be adapted to your requirements. Please contact RIELLO UPS to discuss specific applications and options.

Sample application

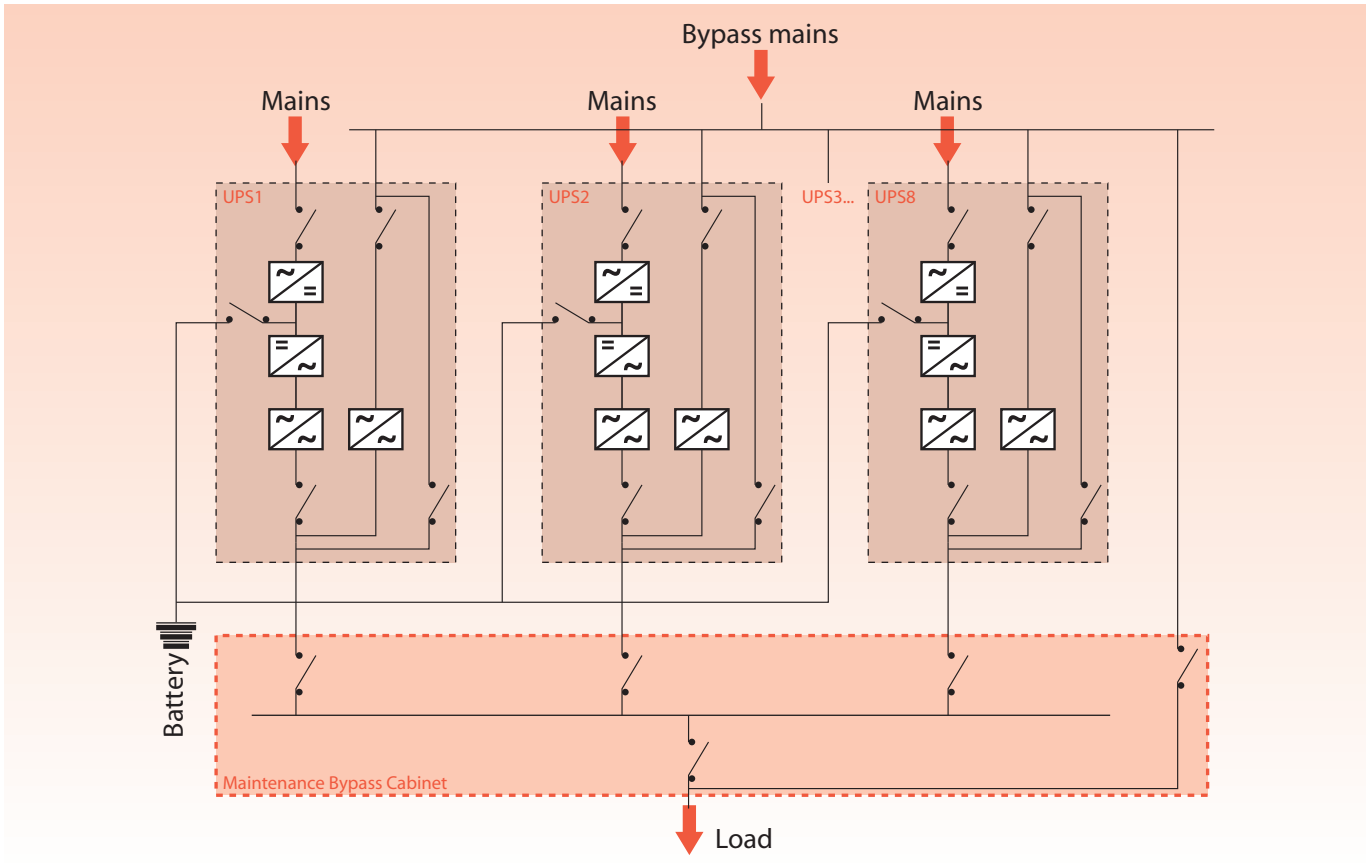
UPS mounted in a shelter

NO-BREAK POWER ARCHITECTURES

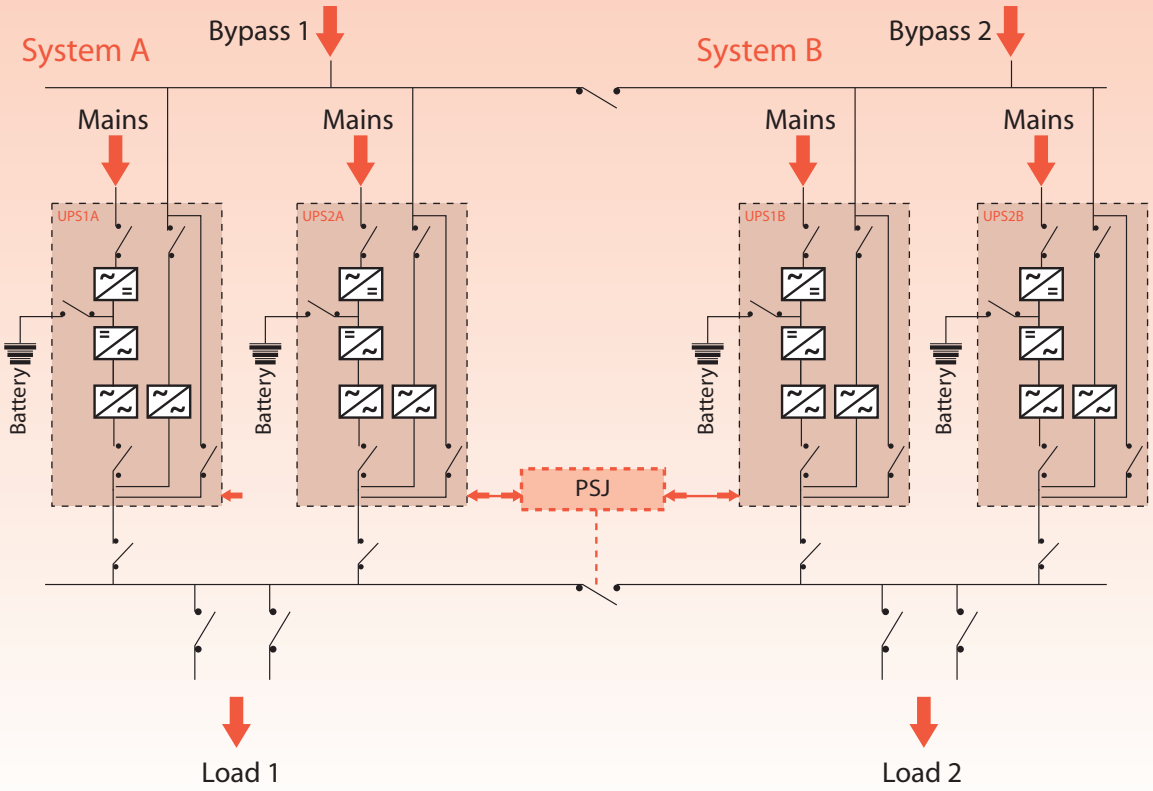
The **Master DIALOG** range features a wide range of modules and configurations that can be manufactured into one complete system to solve your power problems. Each system is therefore unique and we ask that you consult our engineers for your specific application. Some typical configurations are illustrated below:



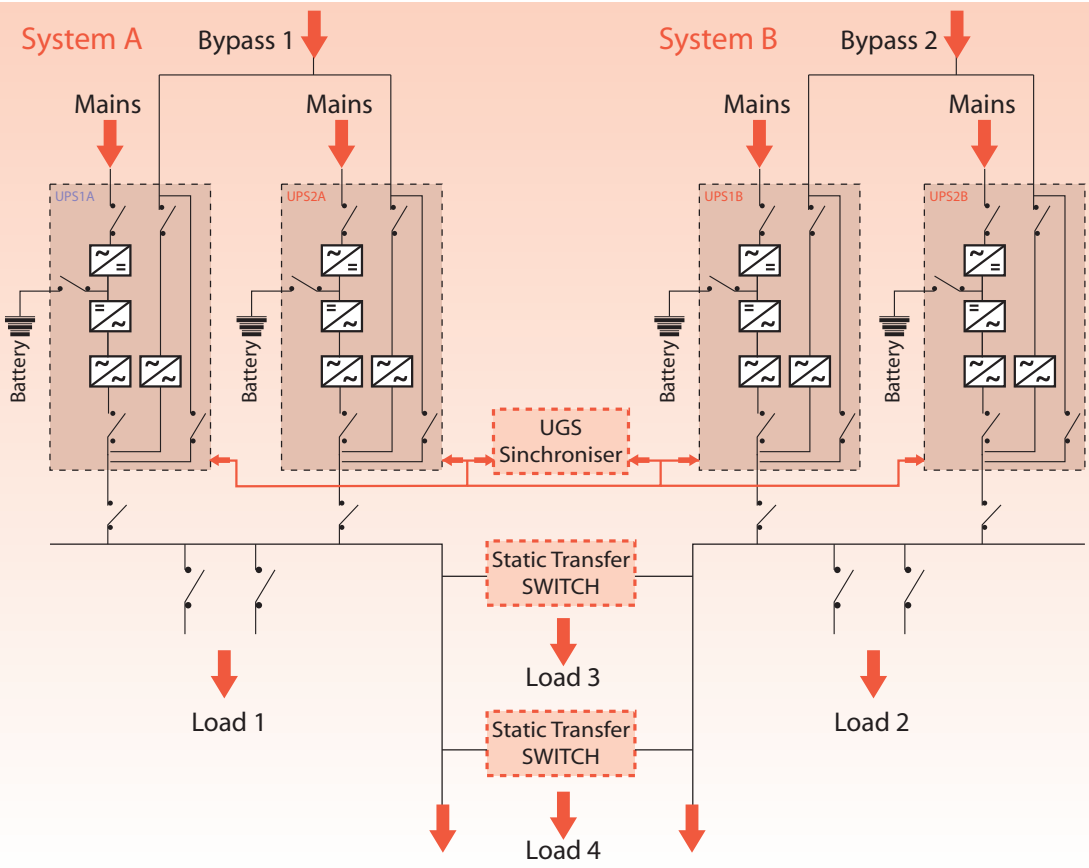
1. Parallel configuration of up to 8 units with separate batteries



2. Parallel configuration of up to 8 units with a common battery



3. Dynamic dual bus configuration



4. Dual bus system configuration

MODELS	12RT 250	12RT 300	12RT 400	12RT 500	12RT 600	12RT 800
POWER (kVA)	250	300	400	500	600	800
INPUT						
Rated voltage (V)	380-400-415 Vac three-phase					
Voltage range	± 20%					
Frequency range	50 ÷ 60 Hz ± 5%					
Total harmonic distortion	< 4% in CLEAN version					
BY PASS						
Rated voltage (V)	380-400-415 Vac single-phase					
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)					
Rated frequency	50/60 Hz (autorange)					
Permitted frequency range	± 2% (selectable from ± 1% to ± 5% from front panel)					
Standard features	Back Feed protection; separate bypass line					
BATTERIES						
Type	Lead, flooded and VRLA AGM / GEL; NiCd					
Maximum recharge current (A)	0,2xC10					
RECTIFIER OUTPUT						
Maintenance voltage	Variable acc. to temperature (-0,5 Vx°C)					
Ripple	<1%					
INVERTER OUTPUT						
Rated power (kVA)	250	300	400	500	600	800
Rated power (kW)	200	240	320	400	480	640
Number of phases	3 + N					
Rated voltage (V)	380-400-415 three-phase + N					
Rated current (A)	362	434	579	724	869	1159
Crest factor (Ipeak/Irms)	3 : 1					
Waveform	Sinewave					
Static stability	± 1%					
Dynamic stability	± 5% in 5ms					
Frequency	50/60 Hz configurable					
Overload	110% 125% 150% of the rated current for 60'/10'/1'					
Frequency stability	± 0,05% on mains failure ± 2% with mains supply present					
ENVIRONMENTAL						
Weight (kg)	2200		2600	3600	4000	5300
Dimensions (hwd) (mm)	1900x1630x850		1900x1630x1000	1900x3200x980		1900x4400x1000
Remote signalling	volt free contacts					
Remote controls	EPO and bypass					
Communication	RS232 + remote contacts					
Operating temperature	0 °C - 40 °C					
Relative humidity	< 95% non condensing					
Colour	Light grey RAL 7035					
Noise	<70 dBA at 1 m			<78 dBA at 1 m		
Protection rating	IP20					
Efficiency	> 93 %			> 94 %		
Compliance	Safety EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3					
OPTIONS						
Isolation transformer module						
UPS Group Synchroniser (see UGS)						
Hot connection device (see PSJ)						
Interface for generator						
LED remote status panel						
LCD based remote control panel						
Closed loop parallel kit option (to be ordered with the unit)						
Empty battery cabinets for prolonged runtime						

MASTER DIALOG RM/RT

RM 8-100 kVA three-phase/single-phase

RT 10-80 kVA three-phase/three-phase

HIGH RELIABILITY

- Extremely high short-circuit current to ensure compatibility with the most difficult transformer applications (lighting, drives and industrial processes) and an isolation transformer on the inverter output.
- full microprocessor control with no-break static and manual bypasses,
- IGBT technology.

MASTER DIALOG RM/RT provides maximum protection for vital 'mission-critical' networks, security applications (electromedical) and industrial applications thanks to its outstanding mechanical and electrical design.
The load is powered continuously by the inverter with a filtered, stabilised and regulated sinewave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbances and surges.
The **MASTER DIALOG RM/RT** series includes 8-100kVA three/single-phase and 10-80 kVA three-phase models and uses double conversion on-line technology (VFI) with an isolation transformer on the inverter output.
MASTER DIALOG RM/RT is supplied with **PowerShield²** software as standard and can be remotely monitored using the TeleNetGuard system from anywhere in the world. Additional battery extension packs allow the standard battery runtime to be extended up to several hours.

MINIMUM IMPACT ON THE MAINS

- Distortion of the input current <5% in the MASTER DIALOG "CLEAN" version which lets you save on sizing of the power supply source (transformer or generator set)

MAXIMUM BATTERY CARE

- battery deep discharge protection and temperature compensating charger
- built-in automatic and manual battery test feature

SIMPLE TO INSTALL

- capability to install the UPS into any distribution system (neutral not required on rectifier input)
- capability to separate the rectifier/bypass power networks and to power these from two separate sources, without Galvanic isolation (necessary on UPS without an output transformer)

MAXIMUM RELIABILITY AND AVAILABILITY

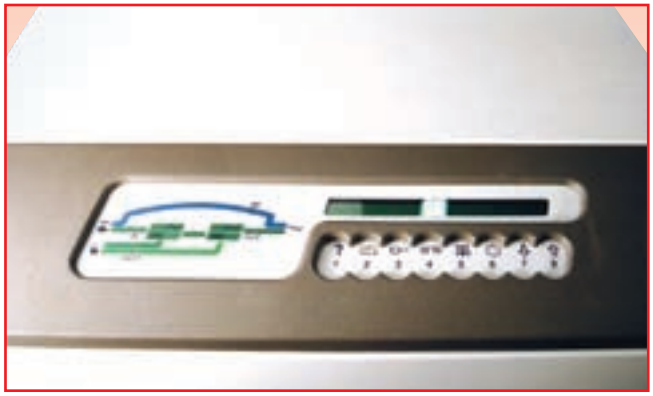
- maximum reliability and power availability - connect up to 8 units in parallel or N+1 redundancy, even of different power ratings.
  The machines continue to work in parallel even if the cable connecting the UPS together is interrupted (CLOSED LOOP)

LOW CONSUMPTION LEVELS

- Thanks to the selectable Economy Mode function that enables use of the mains power supply when the latter is stable, guaranteeing very high performance (>98%) while still ensuring power supply continuity when the mains is down.

OTHER CARACTERISTICS

- Reliable, filtered, stabilised and regulated sinewave output (double conversion on-line technology VFI according to IEC62040-3 specifications) with filters for atmospheric disturbance suppression
- 0.8 power factor makes Master Dialog suitable for powering ICT and industrial loads
- high level diagnostics: event log with 128 messages, states, measurements and alarms - available from the built-in LCD in several languages
- BACK FEED protection: to avoid energy feeding back into the mains supply should a fault occur.



LCD remote panel

ADVANCED COMMUNICATION

- Compatible with TeleNetGuard for remote maintenance
- advanced, multi-platform communication, for all operating systems and network environments:
  PowerShield² supervision and shut-down software included, with SNMP agent, for Windows 95, 98, NT 4.0, Me, 2000, 2003, XP, Mac OS 9.x, X, Linux, Novell operating systems. The UPS is supplied with a cable for direct connection to the PC (Plug and Play)
- RS232 serial port
- volt-free signal contacts
- EPO (Emergency Power Off) shutdown input contact
- input for switching to bypass by remote signal
- LCD or LED-based remote control panel
- generator interface: enables desynchronisation of the UPS output from a generator supply which may be subject to phase and frequency variations. The interface also enables more economic use of the battery charger.

OPTIONS

Isolation transformer module
UPS Group Synchroniser (see UGS page 42)
Hot connection device (see PSJ page 42)
Interface for generator
LED remote status panel
LCD based remote control panel
Closed loop parallel kit option (to be ordered with the unit)
Empty battery cabinets for prolonged runtime

RM MODELS	RM 8	RM 10	RM 15	RM 20	RM 30	RM 40	RM60	RM 80	RM 100
POWER (kVA)	8	10	15	20	30	40	60	80	100
INPUT									
Rated voltage (V)	400 Vac three-phase								
Voltage range	± 20%								
Frequency range	45 ÷ 65 Hz								
Power factor	> 0.92 in RM CLEAN version								
Distortion of the current absorbed	< 5% in RM CLEAN version								
Soft start	0-100% in 10"								
BY PASS									
Rated voltage (V)	230 Vac single-phase								
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)								
Rated frequency	50/60 Hz (autorange)								
Permitted frequency range	± 2% (selectable from ± 1% to ± 5% from front panel)								
Standard features	BackFeed protection; separate bypass line								
BATTERIES									
Type	Maintenance-free lead-acid VRLA AGM / GEL; NiCd								
Maximum recharge current (A)	0,2xC10								
RECTIFIER OUTPUT									
Maintenance voltage	Variable acc. to temperature (-0,5 Vx°C)								
Ripple	<1%								
INVERTER OUTPUT									
Rated power (kVA)	8	10	15	20	30	40	60	80	100
Rated voltage (kW)	6.4	8	12	16	24	32	48	64	80
Number of phases	1								
Rated voltage (V)	230 single-phase								
Rated current (A)	35	43	65	87	130	174	261	348	434
Regulation of the output voltage	220 ÷ 244 V phase/neutral (configurable from control panel)								
Crest factor (Ipeak/Irms)	3 : 1								
Waveform	Sinewave								
Static stability	± 1%								
Dynamic stability	± 5% in 5 ms								
Frequency	50/60 Hz configurable								
Overload	110% 125% 150% of the rated current for 5h/10'/1'								
Frequency stability	± 0,05% on mains failure ± 2% (selectable from ± 1% to ± 5%) with mains supply present								
ENVIRONMENTAL									
Weight (kg)	from 190 to 460	from 200 to 470	from 220 to 490	from 230 to 500	290	340	440	520	650
Dimensions (hwd) (mm)	1200x555x720						1400x800x740		1400 x 1070x740
Remote signaling	volt free contacts								
Remote controls	EPO and Bypass								
Communication	RS232 + remote contacts								
Operating temperature	0 °C - 40 °C								
Relative humidity	< 95% non condensing								
Colour	Light grey RAL 7035								
Noise	54 dBA at 1 m		60 dBA at 1 m		65 dBA at 1 m				
Protection rating	IP20								
Efficiency	>91%	>92%							
Compliance	Safety EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3								
Internal batteries	yes	yes	yes	yes	no	no	no	no	no

RT MODELS	RT 10	RT 15	RT 20	RT 30	RT 40	RT 60	RT 80
POWER (kVA)	10	15	20	30	40	60	80
INPUT							
Rated voltage (V)	400 Vac three-phase						
Voltage range	± 20%						
Frequency range	45 ÷ 65 Hz						
Power factor	> 0.9 in RT CLEAN version						
Distortion of the current absorbed	< 5% in RT CLEAN version						
Soft start	0-100% in 10"						
BY PASS							
Rated voltage (V)	400 Vac three-phase						
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)						
Rated frequency	50/60 Hz auto sensing						
Permitted frequency range	± 2% (selectable from ± 1% to ± 5% from front panel)						
Standard features	BackFeed protection; separate bypass line						
BATTERIES							
Type	Maintenance-free lead-acid VRLA AGM/GEL; NiCd						
Maximum recharge current (A)	0,2xC10						
RECTIFIER OUTPUT							
Maintenance voltage	Variable acc. to temperature (-0,5 Vx°C)						
Ripple	<1%						
INVERTER OUTPUT							
Rated power (kVA)	10	15	20	30	40	60	80
Rated voltage (kW)	8	12	16	24	32	48	64
Number of phases	3 + N						
Rated voltage (V)	400						
Rated current (A)	14	22	29	43	58	87	115
Regulation of the output voltage	348 ÷ 424 V Phase/neutral (from control panel)						
Crest factor (Ipeak/Irms)	3 : 1						
Waveform	Sinewave						
Static stability	± 1%						
Dynamic stability	± 5% in 5 ms						
Frequency	50/60 Hz configurable						
Overload	110% 125% 150% of the rated current for 5h/10'/1'						
Frequency stability	± 0,05% on mains failure; ± 2% (selectable from ± 1% to ± 5%) with mains supply present						
ENVIRONMENTAL							
Weight (kg)	from 210 to 480	from 220 to 490	from 230 to 500	from 282 to 552	330	450	555
Dimensions (hwd) (mm)	1200x555x720					1400x800x740	
Remote signaling	volt free contacts						
Remote controls	EPO and Bypass						
Communication	RS232 + remote contacts						
Operating temperature	0 °C - 40 °C						
Relative humidity	< 95% non condensing						
Colour	Light grey RAL 7035						
Noise	54 dBA at 1 m		60 dBA at 1 m			62 dBA at 1 m	
Protection rating	IP20						
Efficiency	> 90%		> 91%		> 92%		
Compliance	Safety EN 62040-1 EMC EN 62040-2 Directives 73/23-93/68-89/336 EEC EN 62040-3						
Internal batteries	yes	yes	yes	NO	no	no	no

SOFTWARE
and ACCESSORIES

Range of accessories
COMPATIBILITY TABLE

- Communication ports
- Characteristics
- Interface devices
- Communication Kit
- Software

	Standard fittings						Software and optiional accessories													
	USB Port	RS232 port	SLOT	UPS Modem Management	Microsoft Plug & Play	PowerShield²	NetMan 101 plus	NetMan 102 plus	MultiCOM 351	MultiCOM 352	MultiCOM 301	MultiCOM 302	MultiCOM 362	MultiCOM 372	MultiCOM 382	Multi I/O	Multifunction I/O	Profibus Converter	AS/400 Kit	PowerNetGuard	Fernservice (TeleNetGuard)
PLUG DIALOG	1					•															
WIN DIALOG PLUS		1			•	•	•		•		•					•		•	•	•	
NET DIALOG		1			•	•	•		•		•					•		•	•	•	
DIALOG ACTIVE 50 75 100 150	1	1				•	•		•		•					•		•	•	•	
DIALOG ACTIVE 200	1	1	1			•	•	•	•	•	•	•				•		•	•	•	
DIALOG ACTIVE RACK	1	1	1			•	•	•	•	•	•	•				•		•	•	•	
DIALOG PLUS		1	1		•	•	•	•	•	•	•	•				•	•	•	•	•	
DIALOG PLUS RACK		1	1		•	•	•	•	•	•	•	•				•	•	•	•	•	
DIALOG DUAL	1	1	1	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•
POWER DIALOG PLUS		1	1	•		•	•	•	•	•	•	•	•	•	•	•		•	•	•	•
MULTI DIALOG		2	1	•		•	•	•	•	•	•	•				•		•	•	•	•
MASTER PLUS		2	2	•		•	•	•	•	•	•	•				•		•	•	•	•
MASTER DIALOG		1		•		•	•		•		•					•		•	•	•	•

POWERSHIELD²

Communication software

PowerShield² provides efficient, user-friendly UPS management using bar chart displays to show major operational information such as the input voltage, UPS load % and batteries charge %. The software also provides detailed information on fault conditions and UPS operating characteristics. **PowerShield²** has been developed with a client/server architecture that makes it flexible and easy to use, and provides multi-lingual and on-line support.

CHARACTERISTICS

- Sequential and priority-based shutdown: **PowerShield²** provides unattended shut-down of single and networked PCs, saving any active work and the most widely used applications Windows. Users can define their own shutdown procedures and establish the order in which critical computers (such as servers) are to be powered down
- Multi-platform compatibility: **PowerShield²** uses the TCP/IP communications protocol to achieve standardised management and monitoring across the widest possible range of platforms. This makes it possible to monitor computers with different operating systems from a single console, for example monitoring a UNIX server from a PC with Windows and also connecting to UPS located in different geographical areas using dedicated networks (intranets) or the Internet
- Event scheduling: **PowerShield²** users can program their own shutdown procedures, detailing power-off and power-up scenarios to increase system safety and, equally important, power economy
- Messages management: **PowerShield²** keeps users constantly informed about the status of their local and network UPS. A list can be defined of users who should receive e-mail messages, faxes and SMS when faults or sudden blackouts occur
- Integrated SNMP agent: **PowerShield²** features an integrated SNMP agent for management of the UPS. This agent is able to send all the UPS information and generate traps using the RFC 1628 MIB standard. This makes it possible to manage the UPS in compatible SNMP management stations such as HP Open View, Novell Managewise and IBM NetView
- Wap server integrated: **PowerShield²** allows the user to monitor a UPS through WAP mobile phone
- Security, easy to use and connect, communication is password protected to ensure UPS system security. Using the new discovery/ browsing function, all the RIELLO UPS connected to a protected computer or LAN can be displayed in a list format. In the absence of a LAN connection, support is provided for modem-based communication.

OPERATING SYSTEMS SUPPORTED

- Windows 95-OSR2, 98, Me, NT 4.0, 2000, XP, 2003
- Linux
- Novell Netware 3.x, 4.x, 5.x, 6
- Mac OS X, 9.x
- IBM OS/2 Warp and Server
- The most widely used UNIX operating systems such as:
  IBM AIX, HP UNIX, SUN Solaris INTEL and SPARC, SCO Unix and UnixWare, Silicon Graphic IRIX, Compaq Tru64 UNIX and DEC UNIX, BSD UNIX and FreeBSD UNIX, NCR UNIX
- HP OPEN VMS.

Mac

Designed for Microsoft® Windows® XP Windows® 2000

Linux

Sun DEVELOPER

PowerShield² can be downloaded free of charge from the web site www.riello-ups.com

GRAPHIC MONITORING OF UPS STATUS

PowerShield² is a simple but powerful RIELLO UPS management tool. There are various graphic versions for all the operating systems.

DETAILED UPS PARAMETER DISPLAY

PowerShield² provides all the information required for first level diagnostics.

EVENTS LOG AND GRAPHICAL DISPLAY

All changes in UPS operating status are logged and displayed in a graphical format from which the user can monitor trends in the mains electrical parameters monitored.

PROGRAMMING OF UPS PARAMETERS

The user can select several options remotely: turn the UPS on or off, restart after a power loss and instigate a battery test.

GRAPHIC MONITORING OF UPS STATUS VERSION FOR MAC OS X

RIELLO UPS PowerShield² software is the only UPS control and shut-down software running under Macintosh with a client-server cross platform architecture. It allows integration in TCP/IP networks with Windows, Novell, IBM OS/2 and the most widely used UNIX operating systems. PowerShield² supports the Netman Plus series of network agents and provides multi-language support.

BLOCK AND FUNCTIONAL DIAGRAMS

PowerShield² also displays the UPS in block format providing the user with information regarding operating status.

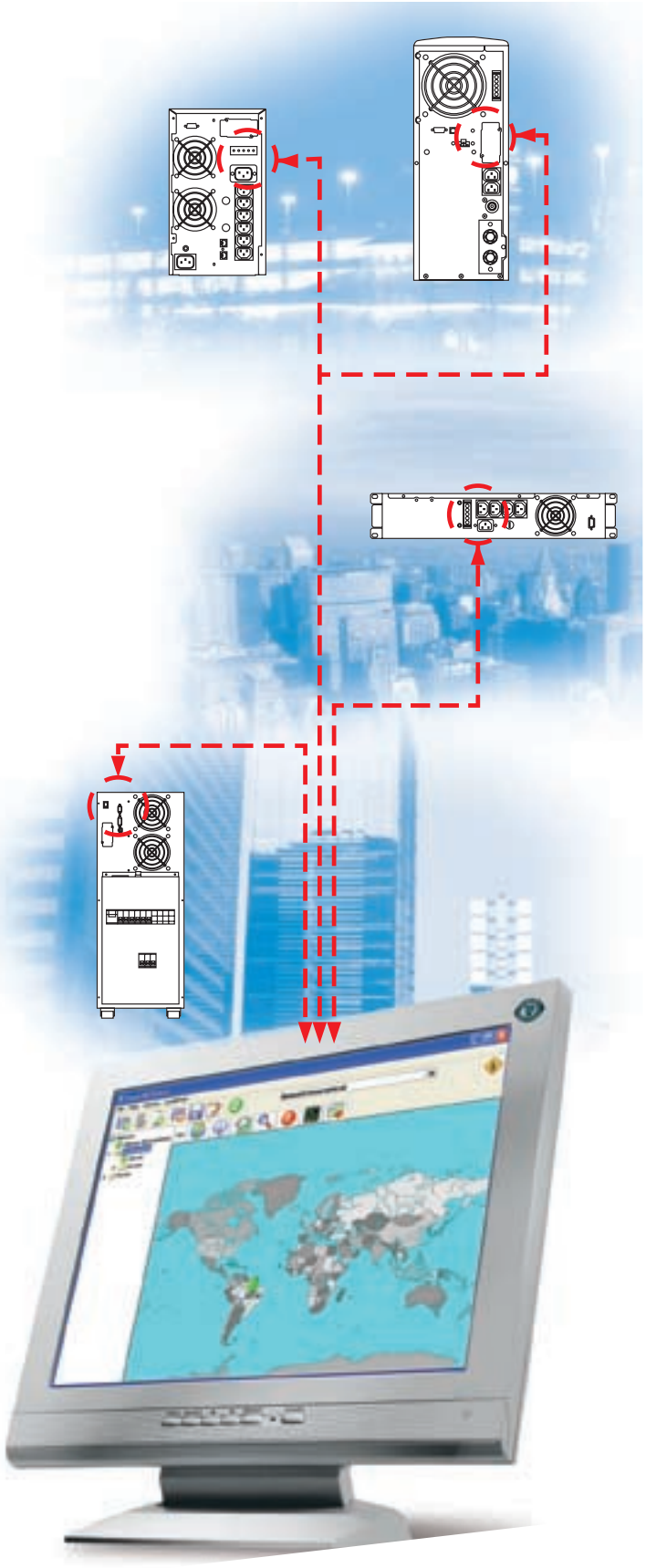
NOTIFICATION OF ALARMS VIA E-MAIL, SMS, FAX AND VOICE

PowerShield² can be configured to forward alarm messages automatically via e-mail, SMS, fax and voice.

POWERNETGUARD

Supervision software

PowerNETGuard software centralises UPS management using network interface (SNMP) communications. It is ideal for Data Centre managers and medium to large sized networks. PowerNETGuard uses the RFC1628 standard Management Information Base (MIB) and ensures standardised UPS management wherever they are located.



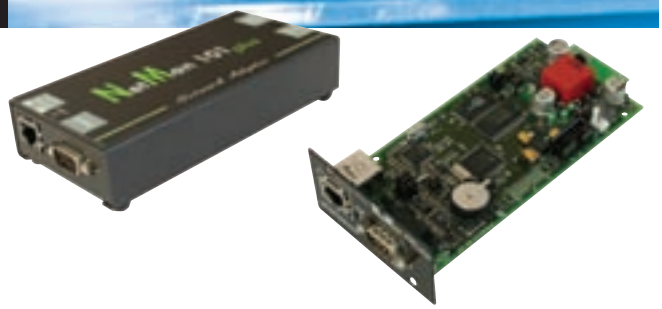
CHARACTERISTICS

- centralised control of remote UPS via Ethernet with SNMP protocol
- multiple-level display of geographical areas, building plans, maps, etc.
- multi-user access with various levels of security
- compatible with Netman Plus and RFC1628 standard network interface (SNMP)
- graphs of physical input and output values stored and backed up to file
- alarm notification via e-mail and SMS
- operating systems supported: Windows (98, ME, NT, 2000, 2003 and XP), Linux, MacOSX, Solaris 8 and 9.

NETMAN 101/102 Plus

Network agent

The Netman Plus network agent allows UPS management across a LAN using any of the main network communication protocols - TCP/IP, HTTP and network interface (SNMP). Netman Plus enabled UPS integrate easily into medium and large sized networks and provide reliable communications between the UPS and management systems employed.



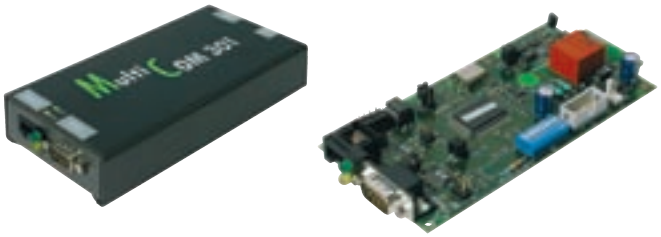
CHARACTERISTICS

- configured via TELNET or a serial terminal
- compatible with PowerShield² and PowerNETGuard control software
- supports the network interface (SNMP) standard communication protocol with proprietary RFC 1628 and MIB
- integrated Web server for browser-based display
- TeleNetGuard modem compatible
- firmware upgradeable through the serial port
- e-mail sent through SMTP server.

MULTICOM 301/302

Protocol converter

The MultiCOM 301/302 protocol converter may be used to monitor the UPS using the MODBUS/JBUS protocol on RS485 or RS232 serial lines. It will also manage a second, independent RS232 serial line that can be used to connect other devices such as the Netman Plus 101 or a PC that uses the PowerShield² software.



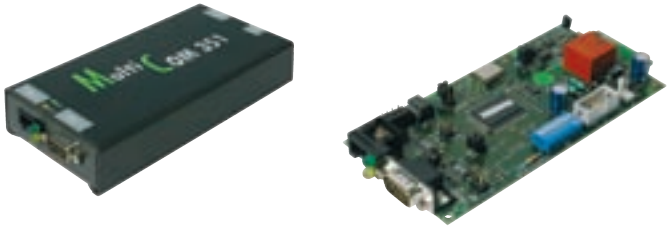
CHARACTERISTICS

- port configuration for MODBUS/JBUS as RS232 or RS485
- management of two independent serial lines
- suitable for Building Management System (BMS) integration
- LED communication flow indicators
- firmware upgradeable through the serial port.

MULTICOM 351/352

Serial link duplexer

The MultiCOM 351/352 is a serial duplexer that allows two devices to be connected to a single serial port on a UPS.
It can be used where numerous serial connections and multiple UPS polling are required, and is ideal for LAN networks with a firewall.



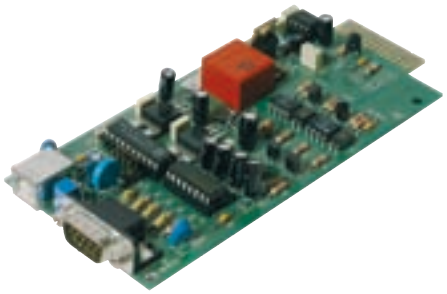
CHARACTERISTICS

- cascading configuration giving a maximum of 4 serial communication ports
- LED communication flow indicators
- firmware upgradeable through the serial port.

MULTICOM 362

Serial / USB port

MultiCOM 362 provides a UPS with an additional RS232 serial interface or USB port. The USB port allows the UPS to communicate with Apple Macintosh computers as well as Windows and Linux operating systems.



CHARACTERISTICS

- compatible with USB 1 or 2
- compatible with PowerShield².

MULTICOM 372

Serial / ESD port

MultiCOM 372 provides a UPS with an additional RS232 serial interface port. The card has Emergency Power Off (EPO) and Remote Shut Down (RSD) inputs with terminal connections.

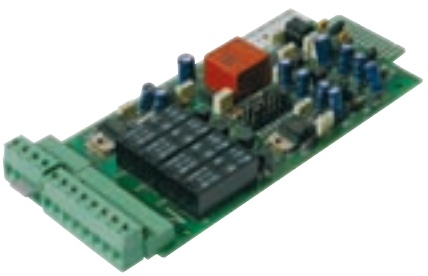
CHARACTERISTICS

- EPO and UPS shutdown interface
- 12Vdc 80mA contact option.

MULTICOM 382

Contacts / ESD board

MultiCOM 382 provides a set of relay contacts to provide UPS alarm and status indication.
The contacts are connected through terminal connections. Signal contacts include Emergency Power Off (EPO), Remote Shut Down (RSD), On Battery, On Bypass, Alarm and Low battery. The contacts are change over or normally open.



CHARACTERISTICS

- max. 3A current at 250Vac
- signal contact customisation.

MULTI I/O

Protocol converter

Multi I/O has configurable input and output signal contacts to allow UPS integration with control systems. It can be used to connect two devices to a single UPS serial communication port. It can also communicate using the MODBUS/JBUS protocol on RS485 lines.

CHARACTERISTICS

- 8 analog/digital inputs
- 8 relay outputs to monitor UPS and mains status
- it can control two independent RS232/RS485 serial lines to monitor the UPS and its operating states using the MODBUS/JBUS protocol
- firmware upgradeable through the serial port.

USB CONVERTER

USB serial converter

The RS232-USB converter allows UPS without a USB port to connect to Macintosh, Windows and Linux PCs with this type of port.

CHARACTERISTICS

- compatible with USB 1or 2
- compatible with PowerShield².

MULTIFUNCTION I/O

Serial link / contacts duplexer

Multifunction I/O is a Dialog plus range accessory with which you can associate the battery operation, by-pass, alarm and battery depleted status reports with dry contacts (maximum current 8A/250V). The accessory also has an input which is used to set up the configurable remote on, remote off and remote on/off functions through the UPSTools software (vers. 1.3.3 or higher).
The functions are provided for UPS with firmware version SWM020-01-16 or higher.

CHARACTERISTICS

- max. current 8A at 250Vac
- possibility of configuring the signal-to-contact associations
- pass-through serial link for PC connection.

PROFIBUS CONVERTER

Protocol converter

The Profibus Dp Gateway is an accessory with which you can connect a UPS to a Profibus DP network. With this device management and monitoring of the UPS can be integrated in a control system based on one of the field buses most widely used in industry for communication between control/automation systems and distributed I/O.

CHARACTERISTICS

- PROFIBUS DP-V1 Protocol.
- PROFIBUS DP-V1 Protocol.
- Configurable address from 1 to 126.
- Configurable baud rate from 9.6 kBaud to 93.75 kBaud.
- Led reporting the communication flow.

KIT for AS400 and i-Series

Communication Kit

The IBM AS/400 has a single-level memory management feature that makes it compulsory for the system to be shutdown in a controlled and orderly manner.
Without UPS protection an AS/400 is not protected from mains failures. A momentary loss of power can cause hardware damage, data corruption and a lengthy reboot period.
The RIELLO UPS AS/400 interface kit allows a UPS to be connected to the AS/400 to initiate an orderly system shutdown on mains failure.

CHARACTERISTICS

- compatible with all AS/400 systems
- supports all the RIELLO UPS ranges.

MULTI PASS 16 and 16-R

Manual Bypass

Multi PASS is a maintenance bypass to allow a UPS to be powered down and removed for service without disruption to the connected load(s).
Multi PASS has both manual and automatic transfer functions. If the UPS is accidentally disconnected or fails any load(s) connected to Multi PASS are automatically transfered to the mains supply.
Multi PASS is available in wall mounted or 19" rack mount formats.
RIELLO UPS supplies a wide range of external maintenance bypasses and switchgear for their UPS up to the 800kVA Master Dialog and for parallel systems up to 6,4MVA.

Multi PASS 16
Wall mount version

Rear panel Multi PASS 16-R
Rack mount version

CHARACTERISTICS

- wall or rack mount versions
- back-feed protection
- manual and automatic transfer functions
- mains power present LED indicator
- IEC, UK, Schuko and hard wired connected options.

DIALOG CSS
STANDBY POWER SYSTEMS



RIELLO UPS uninterruptible power supplies are also designed and built for use in applications such as central supply systems for emergency lighting, security alarms and electro-medical equipment.
The CEI 64-8 V2, EN 50171 standards and other guidelines set down the characteristics and performance levels required from such systems. The main ones are summarized below:

- Up to 3 h back-up times
- Battery recharge time of under 12 h
- Galvanically isolated input/output
- High-level diagnostics – preferably from a front mimic panel
- Remote interface – normally volt-free contacts
- High short circuit current capability

The applications require a continuous power system configured as follows:

- A standard UPS with high capacity battery charger
- An isolation transformer option
- A remote interface to communicate with other peripherals.

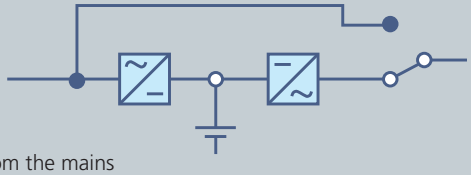
DIALOG CSS CONFIGURATIONS

Model	Powers loads of power up to
Back-up times of up to 3 hours	
DIALOG PLUS	1600 W
DIALOG DUAL	2000 W
POWER DIALOG PLUS	3000 W
MULTI DIALOG	30.000 W

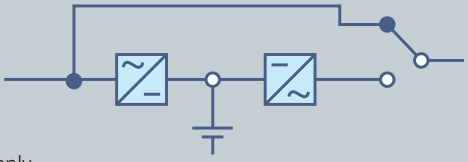
Model	Powers loads of power up to
Back-up times of up to 1 hour	
DIALOG PLUS	2100 W
DIALOG DUAL	3500 W
POWER DIALOG PLUS	7000 W
MULTI DIALOG	64.000 W

Diagrams of the various system solutions

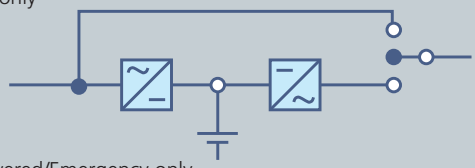
1. Always powered



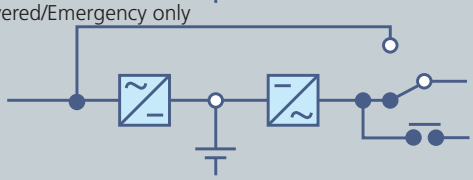
2. Powered from the mains



3. Emergency only



4. Always powered/Emergency only



OPTIONS

- Communication interfaces: see accessories table for individual models
- Isolation transformers
- Second outlet emergency only.

CHARACTERISTICS

- full microprocessor control: for greater reliability and compactness in size
- use of Isolated Gate Bipolar Transistors (IGBT) technology – used in UPS for over 10 years to optimise performance (such as overloads) and reduce physical sizes
- advanced communication interface – the units come with a volt-free contact interface and RS232/485 serial interface for communication with a local PC or computer network
- TeleNetGuard remote support service compatible for remote diagnostics and control
- front panel LCD to display operating status, alarms, measurements and logs
- option to expand the power and/or reliability through the parallel connection of units – 8kVA models and higher.

ADVANCED COMMUNICATION

- **PowerShield²** supervision and shut-down software for the following operating systems: Windows 95, 98, NT 4.0 including work station, Me, 2000, 2003, XP, Linux, Novell, Mac OS 9.x, X, Linux, Novell.

A full range of CSS units, from 700VA to 200kVA.

The Dialog CSS range units are comprised of the following blocks:

 **Rectifier:** converts the alternating voltage input from the mains power supply or from an alternative source (generator) into direct current voltage.

 **Inverter:** converts the direct current voltage supplied by the rectifier into alternating voltage:
in this way the voltage is reconstructed, filtered and stabilised with regard to the input voltage.

 **By-pass:** this allows switching between the inverter and the mains power supply. In **"always powered"** operating mode the CSS load is always powered from the inverter and is only switched onto the mains via the by-pass circuit in the event of a failure. In **"powered from the mains"** mode, the load is powered and only switched onto the inverter when there is no power from the mains. In **"emergency only"** mode the load is only powered from the inverter in the event of a mains power failure. To deal with the current surges required by the powered loads at switching-on time, a Soft Start inverter has been implemented in order to limit the value of current required. In **"always powered/emergency only"** two outputs can be used: one always powered (such as for powering computer loads) and one that is only powered when there is no power from the mains (such as for powering emergency lights that by law must switch on within a maximum time of 0.5 seconds from a mains failure).

 **Batteries:** used to feed the inverter output for the legally required time of 3 hours (if there is no generator). The batteries used are generally valve-regulated, lead-acid type, and do not require maintenance or a special installation room as they have very low gas emissions.

Compliance with Legislation
The Dialog CSS range complies with the relevant European regulations (and national guidelines still in force in some countries) governing such applications.

UPS TEC
Technical Energy Consultant

PRE-SALES CONSULTANCY

TEC is the RIELLO UPS pre-sales advisory service.
Our TEC (Technical Energy Consultant) experts have been working in the power sector for years, and come from backgrounds with technical experience in industry and power plants.

CONSULTANCY ON STANDARDS

TEC personnel can provide advice on the relevant standards affecting:
- RIELLO UPS product ranges
- Batteries
- Installation
- Applications - such as emergency lighting, security and electro-medical.

WORK TOOLS

TEC training and information is provided in the form of:
- UPS sizing
- Official technical guides
- Installation and specification manuals
- TEC newsletters
- Technical specifications.

TECHNICAL CONSULTANCY

TEC personnel can provide advise and guidance on the selection, sizing and installation of RIELLO UPS products.

SUPPORT IN DESIGN

TEC personnel can provide assistance in the design of a UPS system to completely satisfy customer specifications, including bespoke designs.

HELP DESK

TEC is available 24-7 around the world and may be reached by phone, fax or e-mail to answer your requests immediately.

Software TEC

TECHNICAL SUPPORT AND SERVICES

UPService, our technical assistance facility uses highly trained engineers to provide a reliable and competent technical support and after-sales service. UPService can provide customers with:

• a dedicated **CALL CENTRE** for connection to the UPService organisation. UPService personnel are always available and ready to provide advice and assistance regarding UPS installation, maintenance, fault finding and repair.

• the new free **SWAP** assistance service

• **ON SITE** a site based service for larger UPS that cannot be transported back to the UPService facility, either inside or outside warranty. A fast repair on site is guaranteed through the use of state-of-the-art UPS technology and the professionalism of the UPService personnel and Authorised Assistance Centres. UPService guarantees that failed parts are replaced with functioning ones, tested and updated in order to maintain the safety, reliability and operating characteristics of the UPS.

• On request, UPService can provide assistance during installation and initial startup of the UPS and train the personnel. UPService engineers can also verify site suitability, analyse and advise on rental solutions and disconnect and relocate equipment.

• **MAINTENANCE CONTRACTS** can be provided by UPService to minimise response times and repair costs. Contracts range from periodic inspections to comprehensive cover including labour and materials.

• The **TeleNetGuard** software package provides remote 24-7 UPS supervision. TeleNetGuard can interrogate RIELLO UPS connected to a local telephone line to check on their operating logs and system status. Should the UPS report an alarm condition, the UPService Call Centre is immediately notified and a dedicated customer response activated. Routine site reports can be sent automatically to customer personnel.

• UPService organises regular **TECHNICAL TRAINING COURSES** for UPS operators and installers.

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